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# PROCEEDINGS

OF THE

## AMERICAN SOCIETY

OF

## CIVIL ENGINEERS

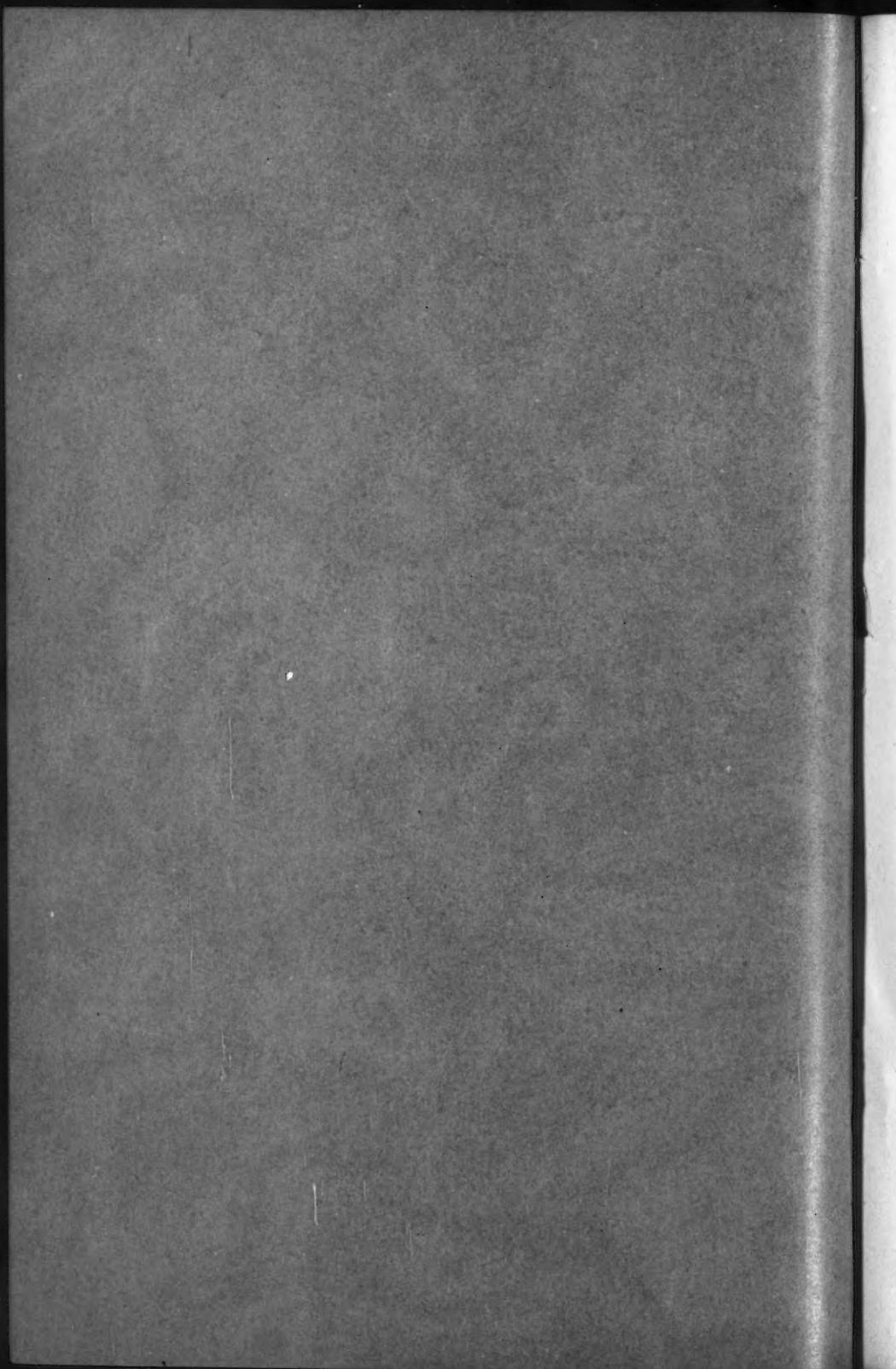
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## AMERICAN SOCIETY OF CIVIL ENGINEERS

INSTITUTED 1852

## PROCEEDINGS

This Society is not responsible for any statement made or opinion expressed in its publications.

### SOCIETY AFFAIRS

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### NEW PLANS FOR SOCIETY PUBLICATIONS

The issuance of this number of *Proceedings* in its new form is the first apparent result of action taken by the Publication Committee in pursuance of the following resolution adopted by the Board of Direction at its meeting of April 19th, 1920:

"That the Publication Committee be instructed to present to the Executive Committee at the earliest date possible some plan whereby economy may be effected in manner and form of future publications, and that the Executive Committee be given power to determine such changes in order that if the Acting Secretary's further proposal of collecting and binding *Proceedings* into volumes of *Transactions*, without reprinting of papers and discussions, is adopted, the membership can receive sufficient notice of the impending change, and of the necessity of saving their *Proceedings* for subsequent binding."

A thorough investigation by the Publication Committee of the whole matter, including the publication activities of the other Founder Societies, and a study of several alternative plans for reducing the cost to the Society of its publications, developed that the continually increasing cost of paper and printing (the price of paper having advanced 67% within a period of six months) resulted in an estimated publication expénsé for 1920 far in excess of the Budget allowance. In fact, it seemed impossible to estimate with any degree of certainty the prices that might prevail in the future owing to the increasing wages in the printing trade and extreme scarcity of paper and binding material, giving rise to fear

that the programme of publications for the remainder of the year might be disarranged or completely interrupted.

Resulting from this investigation, it was the feeling of the Committee that the economy sought lay principally in two directions, namely, in the reduction of the quantity of printed matter to be issued to the membership, perhaps to the extent of 25%, and in the adoption of a policy of the insertion of commercial advertising in *Proceedings*.

As the result of a report on this subject by the Publication Committee to the Board of Direction at its meeting on June 2d, 1920, it was given increased authority to proceed in making changes.

The plan adopted by the Publication Committee, carried out in this issue of *Proceedings* and until such time as it is deemed expedient to enlarge the page size of *Proceedings* and include advertising matter therein, is as follows:

The present size, 6 by 9 in., is to be continued, but with the type page enlarged and margins correspondingly reduced in width, resulting in a saving of approximately 30% in quantity of paper.

The first part of *Proceedings* will be devoted to Society Affairs and will contain as heretofore the "Minutes of Meetings" of the Society and of the Board of Direction, together with "Items of Interest" and "Membership." It is planned to omit the sections hitherto devoted to "New Books" and "Current Engineering Literature." This matter, however, will be issued periodically in pamphlet form to those members who signify their desire to obtain it by making use of the regular application form to be issued with each number of *Proceedings*. The first of these pamphlets covering May, June, and July, 1920, is now available for distribution.

Sections entitled "Society Affairs" and "Activities of Local Sections" will in the future replace the "Announcements" as previously printed in *Proceedings*, and it is hoped to increase the interest of the membership in these sections by selecting and printing at greater length and more prominently than heretofore such Society activities as are of general interest to the Profession. The attention of the Secretaries of the Local Sections is especially called to this point, since it is felt that the value of this part of *Proceedings* in its new form will depend to a great extent on comprehensive reports from them of the engineering activities of their several Sections.

Another proposed new feature for this part of *Proceedings*, to which especial attention is called, is a "Correspondence Section." A limited number of pages will be allotted each month to this section, in which the membership will be invited to discuss briefly and concisely the current issues before the Society, general developments in engineering, and topics of passing importance to the Profession. Technical discussions, however, must be confined as heretofore to papers and discussions formally presented and accepted by the Publication Committee for publication by the Society.

In the second part of *Proceedings* devoted to Papers and Discussions, the Committee has decided to omit the publication of formal papers (except in the case of short, timely papers of wide general interest, and the reports of Special Committees) and discussion thereon, as well as Memoirs. In place of these papers, synopses only will appear in *Proceedings*, but the complete papers, and subse-

quently the discussion thereon, will be published in pamphlet form for distribution to such members as signify their desire for them, making use of the regular order blanks to be issued with each number of *Proceedings*. Separate copies of memoirs of deceased members will be distributed in the same manner.

**It is to be noted that the important change as affecting the membership is the discontinuance of the publication of technical papers and discussions in the *Proceedings*, and their issuance in pamphlet form on request.**

It has also been decided that discussions of papers published by the Society must be closed within three months after the issuance of the papers in order that the author's closure may be printed, as also required, within four months of the publication of the paper itself. At the end of the publication year all papers, discussions, and memoirs, will be collated, re-published in *Transactions*, and furnished to the membership as in the past.

The volume of *Transactions* for 1920 is now being prepared for press, and it is hoped that it will be available for distribution to the membership by the end of the present year.

In view of the somewhat radical change in the style of *Proceedings*, the Publication Committee will be glad to receive suggestions from members, particularly in answer to the following questions:

- (1) Shall the size of *Proceedings* be increased to 9 by 12 in., the standard magazine size?
- (2) Shall the policy of advertising be adopted and an intensive campaign for such advertising be inaugurated?
- (3) Shall editorial comment be introduced in *Proceedings*?
- (4) Is there need for a section in *Proceedings* to be devoted to engineering research?
- (5) Is it desirable to publish employment notices?

In view of the abnormal conditions which now obtain, the scarcity of paper and high cost of printing, the Publication Committee considers that the present is no time in which to experiment with undertakings of a more or less hazardous nature. Therefore, after discussing many plans and changes, it has been decided to adopt only conservative and reliable methods of securing economy, and proceed cautiously with more radical changes in *Proceedings* which may commend themselves as conditions become more settled.

\* For extensive "Comments on Various Civil Engineering Publications" see "Annual Review of Civil Engineering,"

**STUDENT CHAPTERS AUTHORIZED BY BOARD OF DIRECTION**

In accordance with the action of the Board of Direction at its meeting on April 20th, 1920, inviting the establishment of Student Chapters of the Society, there has already been authorized the Stanford University Student Chapter, approval of which was recorded by the Board at its meeting on June 1st. It is hoped that this will be the first of many such chapters, and the Society extends a cordial invitation to all qualified engineering institutions to proceed with the formation of Student Chapters according to the rules adopted in the majority report of the Committee on Student Organizations, as given below. The Board further ruled at its meeting on June 1st, 1920, that the subscription rates for *Proceedings* to members of Student Chapters be made \$4 per annum, and that papers be furnished to such members at cost to the Society.

**RULES ADOPTED BY BOARD OF DIRECTION FOR FORMATION OF STUDENT ORGANIZATIONS**

"1. Student chapters, each composed of students of a school of engineering of recognized reputation, may be affiliated with the American Society of Civil Engineers upon favorable vote by the Board of Direction. The name of such affiliated society shall be 'The .....\*' Student Chapter of the American Society of Civil Engineers; except that, in case a previously existing society becomes so affiliated, it may substitute its established name (with a local word included, if necessary to distinguish it) in place of the standard designation indicated by the blank spaces.

"2. The qualifications required of a proposed student chapter shall include:

- (a) Organization in an engineering school of high standing;
- (b) The endorsement of the application by the head of the civil engineering department;
- (c) Exclusive occupancy of the field, at least as far as senior and junior civil engineering students are concerned; and
- (d) A minimum membership of twelve students.

"3. Each affiliated society shall establish its own rules of government and procedure, but conforming with any regulations that may be formulated by the American Society of Civil Engineers. It is also intended that it shall control the occurrence and character of its meetings; but the American Society of Civil Engineers desires especially to aid in promoting their success and value by frequent consultation and advice, as well as by arranging for speakers, on request, whose addresses will broadly supplement the class work of the members. Each student chapter will also submit an annual report, not later than the last day of December of each year, which shall include:

- (a) A summary statement of the meetings held during the calendar year, giving the date of each, the attendance, the principal speaker and his subject, and other pertinent information;
- (b) Names of the officers, and of the members by classes, at the date of the report; and
- (c) A statement as to the existence of any rival technical society admitting senior or junior civil engineering students to membership.

"4. Any address or paper read before a student chapter may be offered for publication to the American Society of Civil Engineers under the general provisions established for this procedure, and shall be submitted to the Board of Direction when requested by the said Board or when such chapter desires to

\* For example, "Columbia University", or "Cornell Association of Civil Engineers".

publish it in a local journal or elsewhere, it being understood that the privilege of priority in publication exists in the American Society of Civil Engineers, though the Society claims no exclusive copyright upon such papers.

"5. The annual dues of each student chapter shall be \$10 per year, which, under provisions approved by the Board of Direction, shall entitle it to:

- (a) A copy of each issue of the *Proceedings* of the American Society of Civil Engineers;
- (b) The opportunity to publish notices of its chapter activities, etc., in publications of the American Society of Civil Engineers;
- (c) The privilege of having its printing done at cost by the Society; and
- (d) The active co-operation of the American Society of Civil Engineers in advancing the interests of each student chapter by contributing (from its organization, membership, and experience) such service as may be mutually arranged.

"6. Among the privileges offered to the members of student chapters are:

- (a) Individual subscription to the *Proceedings* of the American Society of Civil Engineers at a special price to be fixed by the Board of Direction.
- (b) A membership card, of special design, to be issued annually through the officers of each student chapter;
- (c) The right to attend the meetings and accompany inspection trips and excursions arranged for members of the American Society of Civil Engineers;
- (d) Provision for the publication of requests for summer employment during the college course, or for permanent engagement after graduation on such terms as the Board of Direction may prescribe; and
- (e) The opportunity to hear, on special occasions, speakers whose personal experiences qualify them to speak with authority upon the many questions that are of particular importance to the student during his college course."

#### Dr. Hunt Becomes Secretary Emeritus

In accordance with action by the Board of Direction, Dr. Charles Warren Hunt became Secretary Emeritus of the Society on July 28th, 1920.

**MINUTES OF MEETINGS  
OF THE SOCIETY**

**May 19th, 1920.**—The meeting was called to order at 8.30 p. m.; Vice-President Francis Lee Stuart in the chair; J. P. J. Williams, Assoc. M. Am. Soc. C. E., acting as Secretary; and present, also, 225 members and guests, including about 50 ladies.

The speaker of the evening, Albert A. Northrop, M. Am. Soc. C. E., was introduced by Vice-President Stuart, and addressed the meeting on "The Different Side of South America as Seen by an Engineer", describing his unusual personal experiences during a tour of investigation through South America, illustrated by lantern slides prepared from his own photographs.

Following the address, Messrs. F. Lavis, I. W. McConnell, and S. X. Comber spoke on their experiences in South America.

The following death was announced:

HUBBARD MOYLAN FEILD, of New Orleans, La., elected Member, October 1st, 1913; died April 11th, 1920.

Adjourned.

**June 2d, 1920.**—The meeting was called to order at 8.30 p. m.; President Arthur P. Davis in the chair; Herbert S. Crocker, Acting Secretary; and present, also, 92 members and guests.

The minutes of the meetings of April 21st and May 5th, 1920, were approved as printed in *Proceedings* for May, 1920.

The Acting Secretary read a resolution\* adopted by the Board of Direction at its meeting of June 2d, 1920, relative to the action of the Joint Committee of Engineering Council and the American Institute of Architects in the matter of the award of bridge specifications and design to Architects.

A paper by Charles Evan Fowler, M. Am. Soc. C. E., entitled "Revision of the Niagara Railway Arch Bridge", was presented by the author, who illustrated his remarks with lantern slides, and the subject was discussed by Messrs. D. B. Steinman, Frank W. Skinner, O. H. Ammann, C. Bentham, Shortridge Hardesty, Richard Lamb, and the author.

The Acting Secretary announced the election of the following candidates on June 1st, 1920:

As MEMBERS

EUGENE HILARIAN ABADIE, Washington, D. C.

TANSEY RADFORD AGG, Ames, Iowa

HARRY WILLIAM BOETZKES, New York City

JARED SPERRY BOGARDUS, Lima, Peru

FREDERICK WILLIAM COWIE, Montreal, Que., Canada

LEROY WEBSTER CUMMINGS, A. E. F., France

ROY WEST EMMERT, Chicago, Ill.

HARRY DOUGLAS KEERL, Clear Lake, Iowa

\* See p. 571.

CLYDE CHARLES KENNEDY, San Francisco, Cal.  
EARLE BELL MORDEN, Philadelphia, Pa.  
JAMES AUSTIN MORTLAND, Tallahassee, Fla.  
EDWARD PENNOCK PALMER, New York City  
HUGH HARRY PITCAIRN, Santo Domingo, Dominican Republic  
COLES ABEL RAYMOND, Columbus, Ohio  
JOHN DOUGLAS RENNIE, Guayaquil, Ecuador  
WILLIAM HENRY ROBINSON, Bismarck, N. Dak.  
KIRBY SMITH, Washington, D. C.  
WALTER AMBROSE SWALLOW, Camp Sherman, Ohio  
WALTER LUDLOW TAYLOR, Philadelphia, Pa.  
ROY NATHAN TOWL, Omaha, Nebr.  
JAMES COXEY TRAVILLA, St. Louis, Mo.  
HENRY WILLIAM TROELSCH, New York City  
FREDRICK JAMES TRUMPOUR, Silver Spring, Md.  
THOMAS WASHINGTON WADDINGTON, Elizabeth, N. J.  
ARTHUR JOHN WELLS-JONES, Uitenhage, South Africa

#### AS ASSOCIATE MEMBERS

ENRIQUE AGUERREVERE, Tampico, Mexico  
ROBERT MOORE ANGAS, Jacksonville, Fla.  
AUGUST JOHN BARTELL, Morgantown, W. Va.  
HOMER CHARLES BENDER, Spokane, Wash.  
FRANCK PHILLIPS BEST, Pittsburgh, Pa.  
WALTER DAVID BINGER, New York City  
CHARLES OSCAR BOYD, Beckley, W. Va.  
RICHARD PEGRAM BOYKIN, Asheville, N. C.  
ANDREW GORDON BRIGGS, Walnut Ridge, Ark.  
WALLACE LYON CALDWELL, Birmingham, Ala.  
HOWARD DOUGLAS CAMPBELL, Merchantville, N. J.  
JAMES KENNETH CAMPBELL, New York City  
WILLIAM JOSEPH CARROLL, Bellefonte, Pa.  
HENRY HARRISON CARROTHERS, Kansas City, Mo.  
GEORGE EDWARD CHAMBERLIN, Baltimore, Md.  
JEWELL STANLEY CLARK, Bethlehem, Pa.  
RICHARD NEWELL COOLIDGE, Streator, Ill.  
FAYDETTE DEAN CORLISS, Webster, Mass.  
JAMES ALLERTON CUSHMAN, Vernon, Vt.  
LOUIS MORRIS DAVIS, Bound Brook, N. J.  
JOHN STANLEY DAWSON, Lexington, Ky.  
JOHN CHARAVELLE DAY, Springfield, Mo.  
HOMER WARD DEAKMAN, New York City  
CHARLES SYLVESTER DINGLEMAN, Newark, N. J.  
HARRY LOUIS MALVIN DLYN, New York City  
HERBERT ALLEN DUNLAP, St. Louis, Mo.  
ROScoe K. EARLE, Davenport, Iowa  
ADOLPHE ST. ARMANT FAIRBANKS, Chicago, Ill.

RICHARD HAGMAN FILBERT, Philadelphia, Pa.  
HARRY HARRIS FRANK, Pittsburgh, Pa.  
DAVID WARNER FRY, Baltimore, Md.  
MERTON OTIS FULLER, Bethlehem, Pa.  
HARRY MYRON GARDINER, Lansing, Mich.  
CHARLES ALBERT GRIDLEY, Newburgh, N. Y.  
GAVIN HADDEN, New York City  
JOHN PATRICK HENRY HALLAHAN, Lansdowne, Pa.  
CHARLES ELLETT HART, Detroit, Mich.  
GEORGE ROSCOE HEAP, Philadelphia, Pa.  
HERMAN PHILIP HEVENOR, New York City  
WILLIAM HOLDEN, Sioux City, Iowa  
JAY CLARK HOLLAND, St. Joseph, Mo.  
HAROLD WILLIAM KEITH, Hercules, Cal.  
BYRON LYNN KELSO, Chicago, Ill.  
FRANCIS XAVIER KERN, Philadelphia, Pa.  
JOSEPH FRANCIS KUNESH, Tucson, Ariz.  
WILLIAM WALTER LANE, Florence, Ariz.  
HOWARD ALLEN LEVERING, Ceredo, W. Va.  
MORTIMER REED LEWIS, Boise, Idaho  
GERALD THOMPSON LITTLE, Werribee, Victoria, Australia  
GEORGE ROSS LOGAN, Cisco, Tex.  
CHARLES PATRICK AUGUSTUS LONERGAN, Pendleton, Ore.  
LEWIS DONALD MARS, Little Rock, Ark.  
LOUIS GROVER MERTZ, Jr., Brooklyn, N. Y.  
HARRY NIXON MILLER, Philadelphia, Pa.  
MAX MILLER, New York City  
CRANSTON PARKER MONTGOMERY, Long Beach, Cal.  
THEODORE STANTON NEEDLES, Cleveland, Ohio  
HAROLD JOHN PATTERSON, Utica, N. Y.  
LOUIS GORDON QUIGLEY, Chicago, Ill.  
AUSTIN HUNSICKER REEVES, Elmhurst, N. Y.  
RONALD HOLMES RUDDELL, Bessemer, Ala.  
CHARLES POWER RUMPF, Fairmont, W. Va.  
JAMES SALMOND, JR., Arlington, N. J.  
GEORGE PERCY SEELEY, JR., New York City  
WADE WESLEY SHIDLER, Youngstown, Ohio  
CLYDE ARTHUR SHOCKLEY, Kansas City, Mo.  
REGINALD EDWARD STRADLING, Birmingham, England  
CLYDE ELMO SWANK, Charleston, Mo.  
JOHN MEANS THOMPSON, JR., Havana, Cuba  
WALTER STANLEY TODD, Springfield, Ill.  
PAUL HORNE TURNBULL, Philadelphia, Pa.  
RICHARD FREDERICK WAGNER, Lynchburg, Va.  
ALBERT HENRICH WESSEL, Toronto, Ont., Canada  
CLARENCE McLELLAN WESTON, New York City

DANIEL McGREGOR WILLIAMS, Asheville, N. C.  
 DUDLEY MOORES WILSON, Dallas, Tex.  
 WENDELL JOHN WILSON, Seattle, Wash.  
 CARL EMIL WINBLAD, Brooklyn, N. Y.  
 WINSTON LEE WINTERS, Fort Smith, Ark.  
 JAMES GARFIELD WISE, White Plains, N. Y.  
 GORDON ZANDER, Berkeley, Cal.  
 FREDERICK CLAUDE ZEIGLER, Wilmington, Del.

## AS ASSOCIATES

JAMES RICHARD DONALD MACKENZIE, Kansas City, Mo.  
 EARL JAYSON STROCK, Portland, Colo.

## AS JUNIORS

JESSE PAUL AMBLER, Norwood, Pa.  
 JOSE VILLES BAGTAS, Santa Cruz, Philippine Islands  
 JUDSON BONSALL, Pittsburgh, Pa.  
 CHARLES BARNES CARTWRIGHT, Galion, Ohio  
 WILLARD STILLWELL FOSTER, Rutherford, N. J.  
 JOSEPH ERNEST GILL, Stapleton, N. Y.  
 SIDNEY FRANKLYN GREENHALGH, Rahway, N. J.  
 HEMAN CHARLES GREENWOOD, Rio de Janeiro, Brazil  
 FLOYD WOODWORTH HOUGH, Athens, N. Y.  
 NOAH ELDER HULL, Fort Wayne, Ind.  
 CLARENCE EDWARD KEEFER, Baltimore, Md.  
 WILLIAM JOSEPH O'CONNELL, Philadelphia, Pa.  
 CLARENCE PAUL SCHANTZ, Philadelphia, Pa.  
 JAMES BICKNELL WOODBURY, Chicago, Ill.

The Acting Secretary announced the transfer of the following candidates on June 1st and 2d, 1920:

## FROM ASSOCIATE MEMBER TO MEMBER

GEORGE ROCKWELL BASCOM, Washington, D. C.  
 EDWARD ROSE BOWEN, Los Angeles, Cal.  
 WALTER GLEN BLACK, Mandan, N. Dak.  
 GEORGE RAY BOYD, Ashland, Va.  
 STEPHEN SANS BUNKER, Augusta, Me.  
 EDWARD IVAN CLAWITER, San Francisco, Cal.  
 SAMUEL DEXTER CLINTON, Seattle, Wash.  
 JAMES COWIN, Minneapolis, Minn.  
 WILLIAM CLARENCE DAVIDSON, Roswell, N. Mex.  
 BARRY DIBBLE, Burley, Idaho  
 CHARLES FRANCIS DINGMAN, Palmer, Mass.  
 OTTO ELIS ECKERT, Lansing, Mich.  
 DEAN GRAY EDWARDS, Jamaica, N. Y.  
 ROYAL WILLIAM GELDER, Greeley, Colo.  
 CARL VALDEMAR HANSEN, New Madrid, Mo.

DERWENT GORDON HESLOP, Norfolk, England  
 EDWIN GUSTAV KASTENHUBER, Jr., Easton, Md.  
 CLARENCE HERBERT KROMER, Sacramento, Cal.  
 LEROY MCWETHY, Oakland, Cal.  
 ARTHUR POMEROY MELTON, Gary, Ind.  
 WILLIAM CLYDE MUNDT, Tulsa, Okla.  
 RAYMOND VICTOR ROSENBAUM, Fairmont, W. Va.  
 CLARENCE URLING SMITH, Chicago, Ill.  
 DONALD DAVID SMITH, Detroit, Mich.  
 JOHN STEWART, Chevy Chase, Md.  
 EDWY LYCURGUS TAYLOR, New Haven, Conn.  
 JAMES EATON TORREY, Paterson, N. J.  
 DONALD CRAMER WAITE, Brooklyn, N. Y.

**FROM JUNIOR TO MEMBER**

IRVING WOOSTER PATTERSON, Hamilton, R. I.

**FROM ASSOCIATE TO ASSOCIATE MEMBER**

LOUIS MITCHELL, Syracuse, N. Y.

**FROM JUNIOR TO ASSOCIATE MEMBER**

ARTHUR SACKETT BUTTERWORTH, Philadelphia, Pa.

WILLIAM JAMES CHOUINARD, Seattle, Wash.

RICHARD DE CHARMS, Jr., Cambridge, Mass.

THEODORE SCHUYLER HERSEY, San Mateo, Cal.

LAWRENCE RASMUS HJORTH, New York City.

ANDREW HALL HOLT, Iowa City, Iowa

FRED ROY KRACH, Chicago, Ill.

CHARLES RAYMOND LARKIN, Philadelphia, Pa.

ROBERT ANSLEY MONROE, San Francisco, Cal.

RUFUS BURLESON PEARCE, Richland, Tex.

JESSE HOPE PEEK, Baltimore, Md.

JOHN OWINGS PRESTON, Philadelphia, Pa.

WALTER ALAN RICHARDS, Columbus, Ga.

ROYAL UPSON ST. JOHN, Sacramento, Cal.

WILLIAM GLENN SLOAN, Boise, Idaho

HENRY TEN HAGEN, Warsaw, N. Y.

PERCY HIXON VAN ETEN, Tacoma, Wash.

The Acting Secretary announced the following deaths:

CHARLES ALLYN GILCHRIST, of Oakland, Cal., elected Member, December 5th, 1911; died May 20th, 1920.

HOMER HAMLIN, of Los Angeles, Cal., elected Member, May 4th, 1904; died May 14th, 1920.

EDMUND GIBBON SPILSBURY, of New York City, elected Member, December 7th, 1892; died May 28th, 1920.

WILLIAM MARTIN TORRANCE, of Savannah, Ga., elected Member, July 1st, 1909; died May 18th, 1920.

GEORGE MERRICK HERRON, of Palo Alto, Cal., elected Junior, April 2d, 1907; Associate, February 2d, 1909; Associate Member, September 5th, 1911; died February, 1920.

Adjourned.

### ELECTIONS AND TRANSFERS BY THE BOARD OF DIRECTION, JULY 6th, 1920.

#### ELECTED AS MEMBERS

RODNEY LINTON BELL, Paris, Ill.  
 GEORGE CYRUS BUNKER, Balboa Heights, Canal Zone, Panama  
 THURMAN WILLARD DIX, Burlington, Vt.  
 ARTHUR CHESTER EATON, Worcester, Mass.  
 LEROY SUMMERFIELD EDWARDS, Newport News, Va.  
 CLEM LEINSTER GARNER, Washington, D. C.  
 FRANK WEBSTER GILCREAST, Bethlehem, Pa.  
 MURRAY KAY, Cherrydale, Va.  
 HORACE ALCINOUS KELLEY, Prineville, Ore.  
 CHARLES NEWTON LITTLE, Moscow, Idaho  
 JOEL HARLAN MAYNE, Council Bluffs, Iowa  
 ROBERT REGNAULT NACE, Philadelphia, Pa.  
 EDGAR WARNER NORTON, Worcester, Mass.  
 OSCAR ALBERT PIPER, Seattle, Wash.  
 FORREST ALLEN PRUITT, Pittsburgh, Pa.  
 JAMES HOWARD ROBB, Spokane, Wash.  
 AMOS DEAN ROBINSON, Spokane, Wash.  
 EDWARD CLYDE SLOCUMB, Minneapolis, Minn.  
 GODFREY LEWIS SMITH, Newport News, Va.  
 MONROE ANDREW STAINER, Fort Worth, Tex.  
 PARK WASHBURN STICKNEY, Detroit, Mich.  
 SHERMAN GEORGE SWIGART, Akron, Ohio  
 CLARENCE EVERETT TAIT, Los Angeles, Cal.  
 ROBERT SPENCER THOMAS, Mobile, Ala.  
 ROBERT NEIL WAID, Piqua, Ohio  
 JOSEPH DOMAN WARDLE, Cedar Rapids, Iowa  
 GEORGE FREDERICK WIEGHARDT, Baltimore, Md.

#### ELECTED AS ASSOCIATE MEMBERS

JAMES CLARK AKERS, Nashville, Tenn.  
 AKE LUDVIG ALIN, San Francisco, Cal.  
 JOHN HOLLETT AMES, Ames, Iowa  
 HARRY SAMUEL BAKER, Spokane, Wash.  
 ELMER CLYDE BARTON, Bluefield, W. Va.  
 ANSON MORSE BLENUS, North Pelham, N. Y.  
 CLARENCE ROBINSON BLISS, Worcester, Mass.

MAURICE THEODORET BOLMER, Easton, Pa.  
BLAIR BOYLE, Fort Scott, Kans.  
OTTO ELLSWORTH BROWNELL, Minneapolis, Minn.  
CHARLES RANDALL BURLEIGH, Buffalo, N. Y.  
GEORGE NEAL CARTER, Jerome, Idaho  
LEON OLIVER CHAMBERS, Spokane, Wash.  
CHARLES LYMAN CHATFIELD, Denver, Colo.  
ALBERT AUSTIN CHENOWETH, Sioux Falls, S. Dak.  
ROBERT ENOCH COLVIN, Evansville, Ind.  
LYMAN FRANCIS COPELAND, Denver, Colo.  
WALTER REINHARDT CRECELIUS, St. Louis, Mo.  
ERNEST COFIELD DERBY, Fayetteville, N. C.  
ALBERT WALLWICK DILLING, Wilmette, Ill.  
HERSCHEL WOOD DRIVER, Cleveland, Ohio  
ADOLPHUS JAMES EDDY, Berkeley, Cal.  
CARL ALEXANDER EGNER, Washington, D. C.  
DONALDSON HAMPTON EVANS, Seattle, Wash.  
PAUL HENRY EVERHARD, Wichita, Kans.  
JULIO FAJARDO, Cali, Colombia  
CHRISTIAN PETER FAUERSO, The Dalles, Ore.  
BERNARD HOOE FOWLE, Jr., Nephi, Utah  
PRESTON MURDOCH GEREN, Canyon, Tex.  
ARTHUR BATES GOODWIN, Verdi, Nev.  
RICHARD HARTSHORN GOULD, White Plains, N. Y.  
EVELYN LLEWELLYN REEVES GRIMSLY, London, England  
JOHN SEALE HANCOCK, Cleveland, Ohio  
JAMES SAMUEL HARRISON, Jr., Waco, Tex.  
BERTHOLD FRANCIS HASTINGS, Bridgeport, Conn.  
FRANCIS HENDERSON, Pittsburgh, Pa.  
RICHARD JOSEPH HICKS, Stroud, New South Wales, Australia  
RAYMOND ALVA HILL, Los Angeles, Cal.  
RUSSELL WOOLSTON HUNT, Boonton, N. J.  
LOUIE THEODORE JESSUP, Yakima, Wash.  
THOMAS HENRY JUDD, Spokane, Wash.  
ALEXANDER ANDREW LAIRD, Iola, Kans.  
DON LEE, Dallas, Tex.  
CONRAD FERDINAND LEUE, Shreveport, La.  
MILO SMITH LONG, Birmingham, Ala.  
WARREN LEE MARTIN, Pittsburgh, Pa.  
CHARLES ARCHIE MATHEWS, Philadelphia, Pa.  
CLARENCE FRANCIS MAYNARD, Fort Worth, Tex.  
ALBAN MAZEAU, New York City  
ANDREW MIEDWIG, Baltimore, Md.  
FRANK THOMAS MILLER, Greensboro, N. C.  
THORNTON ALLEN MILLS, Jr., Portland, Ore.  
FRED WILLIAM MORRILL, Cincinnati, Ohio  
OTIS MOORE PAGE, Dillon, S. C.

CARL ELLIOTT PAINTER, Salt Lake City, Utah  
HORACE HAMILTON PERSON, Harriman, Pa.  
HENRY ARTHUR PHILIP, Nutley, N. J.  
JOHN FRANKLIN REYNOLDS, Storm Lake, Iowa  
HERBERT RIDGWAY, New York City  
DEERING SAMUEL ROBERTS, Boston, Mass.  
EDGAR ALAN ROWE, Los Angeles, Cal.  
FRANKLIN GUY RUTAN, Altoona, Pa.  
NIELS FERMANN SCHACH, Santo Domingo, Dominican Republic  
OTHELLO HENRY SCHROEDL, Baltimore, Md.  
JOHN FRANCIS SEIFRIED, Chicago, Ill.  
HENRY CONNOR SHEILS, Roxbury, Mass.  
STUART RAYMOND SMITH, Philadelphia, Pa.  
HORACE SYLVAN STANSEL, Ruleville, Miss.  
JOHN LOGAN STEWART, Chicago, Ill.  
LEON PAUL SUTTON, Oklahoma, Okla.  
PAUL SWARTZ, Norfolk, Va.  
ELMER ELLSWORTH THOMPSON, JR., Elmira, N. Y.  
ALBERT EGGLESTON TIMMONS, Los Angeles, Cal.  
HAROLD EUGENE TOBEY, Scottsdale, Pa.  
JOSEPH ANDREW TOSI, Worcester, Mass.  
ISAAC NEWTON TOWNE, Philadelphia, Pa.  
GUY WINFORD TRUE, Balboa Heights, Canal Zone, Panama  
ROY EUGENE WALWORTH, Binghamton, N. Y.  
JAMES BALDWIN WARRACK, Seattle, Wash.  
CLAUDE RAYMOND WEYMOUTH, Milwaukee, Wis.  
FRANK MORTON WHITE, Chicago, Ill.  
WALTER GEORGE WILL, Upper Sandusky, Ohio  
BURTON LYMAN WINSLOW, Akron, Ohio  
VAUGHN WOOD, Calexico, Cal.  
PAO-LING YANG, Tientsin, China

**ELECTED AS ASSOCIATES**

ARTHUR CLELL ADAMS, Ozark, Mo.  
ARTHUR GUSTAVE GEHRIG, Lincoln, Nebr.  
PATRICK McGOVERN, New York City  
HARRY ARTHUR SLEEPER, Philadelphia, Pa.

**ELECTED AS JUNIORS**

EDWIN RYAN AKERS, New York City  
ALBERT FREDERICK BERNI, Portland, Ore.  
LLEWELLYN DE CEW, San Francisco, Cal.  
JOHN JONES DOWNEY, Sandy Spring, Md.  
LEON FRANCIS DRISCOLL, Philadelphia, Pa.  
CASPER MARSHALL DURGIN, Exeter, N. H.  
PAUL JEROME GANEY, Bethlehem, Pa.  
CORNMAN LOUIS HAHN, Camp A. A. Humphreys, Va.

ROBERT ALEXANDER HUESTIS, Seattle, Wash.  
 WILLIAM LINDSAY, JR., Greenville, S. C.  
 CHARLES JOSEPH McCARTHY, Washington, D. C.  
 JAMES CLARE MAGEE, Detroit, Mich.  
 JUNIUS TEETZEL MOORE, Charleston, W. Va.  
 ARTHUR GEORGE READY, New York City  
 THOMAS FRANK REILLY, JR., Port Richmond, N. Y.  
 HAROLD CASE WILLCOX, Cartagena, Colombia

## TRANSFERRED FROM ASSOCIATE MEMBER TO MEMBER

SAM WIGFALL BRADSHAW, Bethlehem, Pa.  
 GROVER CHARLES BROWN, Johnstown, Pa.  
 JOHN HENRY BROWN, JR., Philadelphia, Pa.  
 HOWARD BLAINE BUSHNELL, Aurora, Ill.  
 J. C. CARPENTER, Richmond, Va.  
 CHARLES JUDSON COLGAN, Pittsburgh, Pa.  
 JOSEPH ALFRED ELLIOTT, Wheatland, Wyo.  
 ROBERT FOLLANSBEE, Denver, Colo.  
 GEORGE BRADLEY GASCOIGNE, Cleveland, Ohio  
 ROY CECIL GRAY, Joplin, Mo.  
 LESTER CLARK HAMMOND, New York City  
 WILBUR SHERFEY HANNA, Billings, Mont.  
 NORMAN BANKS LIVERMORE, San Francisco, Cal.  
 EUGENE MCLEAN LONG, New York City  
 ORO McDERMITH, Salt Lake City, Utah  
 GEORGE MONCUR, Glasgow, Scotland  
 GEORGE FRANCES NICHOLSON, Seattle, Wash.  
 GEORGE LOYAL SAWYER, Aurora, Ill.  
 FRANK CHARLES STARR, Washington, D. C.  
 RUSSELL SUTER, Albany, N. Y.  
 FREDERICK PETER SWARTZ, Fort Worth, Tex.  
 CARROLL ROSE THOMPSON, Philadelphia, Pa.  
 ANDREW TRAVERS-EWELL, New York City  
 WILLIAM HENRY TRINKAUS, Chicago, Ill.  
 FRED BACON WALKER, Seattle, Wash.  
 GEORGE GROVER WICKLINE, Austin, Tex.

## TRANSFERRED FROM JUNIOR TO ASSOCIATE MEMBER

BERNARD EDWARD BAER, Fort Leavenworth, Kans.  
 ELMER STYNER BLAINE, Cape Girardeau, Mo.  
 WALTER JOHN BUCHANAN, Giffnock, Scotland  
 SINCLAIR ERNEST CARPENTER, Oakland, Cal.  
 MAURICE DAVID GLESSNER, Yuma, Ariz.  
 DAVID NELSON MILHAN, Chicago, Ill.  
 MISSAC THOMPSON, New York City  
 STEPHEN RIGGS TRUESDELL, Evanston, Ill.  
 CLEMENT F. WAITE, Camas Valley, Ore.

GUY BURT WALKER, Wilkes-Barre, Pa.

FRANK LLOYD WEAVER, Grosse Ile, Mich.

CLAUDE ALLEN WEBB, Chicago, Ill.

JAMES BERTRAND WELLS, Palo Alto, Cal.

### OF THE BOARD OF DIRECTION

(Abstract)

**June 1st, 1920.**—The Board met at 10.07 a. m., at the Headquarters of the Society; President Davis in the chair; H. S. Crocker, Acting Secretary; and present, also, Messrs. Beahan, Clark, Cummings, Curtis, Elwell, Fort, Greene, Grunsky, Henny, Herschel, Hoyt, Hudson, A. M. Hunt, Ketchum, Langthorn, Marston, Marx, Metcalf, O'Connor, Pegram, Talbot, Tuttle, Wagner, and Wall.

A report was received from the Finance Committee which included among other recommendations an appropriation covering the *pro rata* share of this Society of the expense of the "Organizing Conference" to be held in Washington, D. C., June 3d-4th, 1920. This report was adopted.

A report from the Library Committee covering routine matters was received and accepted.

A progress report from the Committee on Special Committees was received and accepted.

Past-President Talbot reported on various actions of Engineering Council since the last meeting of the Board, and referred to the previous action of the Board at its meeting of April 20th, 1920, in passing certain resolutions setting forth its position regarding the design and construction of bridges at Pittsburgh, Pa. He called attention to the opposing resolution adopted on May 4th, 1920, by a Joint Committee on Co-Operation of Engineering Council and the American Institute of Architects, which was given publicity through the technical press.

After discussing the whole matter at length, the Board adopted the following resolution:

"Whereas: The Board of Direction of the American Society of Civil Engineers on April 20th, 1920, passed the following resolution:

"Whereas: It has come to the attention of the Board of Direction of the American Society of Civil Engineers that the work of preparing plans and specifications for and in supervising the construction of bridges and other important engineering structures has been awarded to Architects, and

"Whereas: The work involved in the design of such structures is primarily engineering with respect to safety, cost, design, and adequacy, and

"Whereas: The procedure thus established is detrimental to the public interest, in that it subordinates the safety, adequacy, and cost of such structures to their appearance, therefore be it

"Resolved: That it is the opinion of the Board of Direction of the American Society of Civil Engineers that the responsibility for the design and construction of such work should be entrusted only to qualified Civil Engineers."

Following which copies were sent to Engineering Council and to the American Institute of Consulting Engineers for their information, and

"Whereas: Joint Committee of Engineering Council and the American Institute of Architects at a meeting held May 4th, 1920, in Washington, D. C., adopted the following:

"The safety, adequacy, durability and suitability of purpose in any structure, whether bridge or building, are axiomatic. Under certain conditions structures should in addition be aesthetically excellent. In such cases the design must involve, therefore, collaboration between engineers and architects. Whether the engineer is chief and the architect associate or *vice versa* is an administrative detail of relative unimportance. Either combination should secure satisfactory results.

"The Committee cannot, therefore, concur in principle with the resolution of the American Institute of Consulting Engineers of February 5th, 1920, or in the resolution of the American Society of Civil Engineers of April 20th, 1920."

*Be It Resolved:* That the Board of Direction of the American Society of Civil Engineers reaffirms its attitude as previously indicated by its resolution of April 20th, 1920, and expresses its view that the matter of bridge design as established by practice is one solely within the province of Civil Engineers, and it is therefore not a matter upon which Engineering Council has been delegated authority of action.

*Resolved Further:* That Engineering Council be requested to refrain from any attempt to represent this Society in discussion of this matter.

"And Whereas: Publicity has been given to the action of the Joint Committee of Engineering Council and the American Institute of Architects as above cited, the Secretary is instructed to send copies of this resolution to Engineering Council, American Institute of Architects, and to the technical press."

A letter dated May 28th, 1920, from Messrs. Arthur S. Tuttle, Chairman, and Charles Whiting Baker, Secretary, of the Committee of Engineering Council on Classification and Compensation of Engineers, transmitting the report of that Committee, was presented, and the President was authorized to appoint a committee of three to consider the work of the Committee on Compensation and to report to the Board its recommendations of appropriate action in the premises.

H. S. Crocker presented his resignation as Chairman and member of the Finance Committee, and acting on authority conferred by the Board, President Davis appointed Past-President Clemens Herschel as Chairman of the Finance Committee for the remainder of the ensuing year.

President Davis reported that acting by authority granted him at the meeting of the Board on April 19th, 1920, he had appointed the following members as delegates of the Society to the Organizing Conference in Washington, D. C., on June 3d and 4th, 1920: Messrs. Arthur P. Davis, Leonard Metcalf, R. A. Cummings, E. E. Wall, Willard Beahan, John C. Hoyt, Richard L. Humphrey, George G. Anderson, Gardner S. Williams, and George R. Putnam.

A report was received from a committee, consisting of Messrs. J. C. Hoyt, John A. O'Connor, R. A. Cummings, Harry Hawgood, and Anson Marston, appointed to divide the territory occupied by the membership of the Society into thirteen Districts in accordance with Section 1 of Article VII of the Constitution. This report was considered, and it was decided to defer action until the Board meeting at the time of the Annual Convention, and the Committee was continued in order that it might consider possible objections from the membership to the proposed re-districting. It was further decided to refer the report to the membership through the medium of Local Sections.

A report from the Publication Committee was considered, and it was moved, seconded, and carried that the Publication Committee in the issuance of future numbers of *Proceedings* and *Transactions* be authorized to increase the size of type page, cut down the space devoted to current events, new books, abstracts, etc., with certain other modifications, at its discretion.

It was further unanimously decided not to proceed with advertising nor with the insertion of advertisements in the publications of the Society at the present time.

The following supplementary resolution was adopted:

"Resolved: That the Publication Committee be requested to continue its investigation with respect to Plan No. 3, and at such time as in its judgment the advertising field may be properly entered upon, to report back to the Board a more detailed plan based upon obtaining sufficient advertising revenue to make the publication largely self-sustaining."

The following dates were determined for future Board meetings during the year 1920: Quarterly Meetings, August 9th, Portland, Ore., and October 11th, New York City; Intermediate Meetings, July 6th, New York City, and December 6th, New York City.

The approaching Annual Convention of the Society to be held in Portland, Ore., on August 10th-12th, 1920, was discussed, and on authorization by the Board, President Davis appointed the following Committee of the Board in this matter: Messrs. D. C. Henny, Chairman, Charles D. Marx, and Herbert S. Crocker.

The President was authorized to appoint a Committee to Consider the Award of Prizes for 1920.

Formal application for the establishment of the Associated Civil Engineers of Stanford University Chapter of the American Society of Civil Engineers was approved, this being the first such Chapter thus recognized. A special subscription rate for *Proceedings* to members of Student Chapters was fixed at \$4 per annum, and it was decided that papers be furnished such members at cost to the Society.

President Davis reported that, in accordance with authority conferred on him by the Board, he had appointed Prof. J. K. Finch as representative of this Society on Advisory Council in carrying out the programme of co-ordination of Federal map-making efforts.

Application for the organization of the Cincinnati Section of Members of the Society was approved, with the understanding that the initial organization shall contain at least 25 members.

Ballots for membership were canvassed, resulting in the election of 25 Members, 82 Associate Members, 2 Associates, and 14 Juniors, and the transfer of 1 Junior to the grade of Member, and 17 Juniors to the grade of Associate Member.

One Associate was transferred to the grade of Associate Member and 28 Associate Members were transferred to the grade of Member.

Other routine business was transacted.

Adjourned at 6.30 P. M., to reconvene at the conclusion of the intervening meeting of the Membership Committee.

**June 2d, 1920.**—The Board reconvened at 11.45 A. M.; President Davis in the chair; H. S. Crocker, Acting Secretary; and present, also, Messrs. Clark,

Cummings, Curtis, Elwell, Fort, Greene, Grunsky, Henny, Herschel, Hoyt, Hudson, A. M. Hunt, Ketchum, Langthorn, Marston, Marx, Metcalf, O'Connor, Pegram, Talbot, Tuttle, Wagner, and Wall.

A report from the Membership Committee was received and acted on.

After further discussion of proposed changes in style of *Proceedings*, and on motion of Chairman Elwell of the Publication Committee, the Publication Committee was authorized to increase the page size of *Proceedings* to 9 by 12 in. and to insert proper advertising matter at such time as in its opinion this change would be advisable.

Adjourned.

**July 6th, 1920.**—The Board met at 10.51 P. M., at the Headquarters of the Society, immediately after the adjournment of the Membership Committee; Vice-President Cummings in the chair; H. S. Crocker, Acting Secretary; and present, also, Messrs. Curtis, Elwell, Hudson, Pegram, Tuttle, and Wagner.

Ballots for membership were canvassed resulting in the election of 27 members, 85 Associate Members, 4 Associates, and 16 Juniors, and the transfer of 13 Juniors to the grade of Associate Member.

Twenty-six Associate Members were transferred to the grade of Member.

A report from the Membership Committee was received and acted on.

Adjourned.

## ITEMS OF INTEREST

The Committee on Publications will be glad to receive communications of general interest to the Society, and will consider them for publication in *Proceedings* in "Items of Interest". This is intended to cover letters or suggestions from our membership concerning matters which are not of a technical character. Such communications, however, must not be controversial or commercial.

### NATIONAL SERVICE DEPARTMENT OF ENGINEERING COUNCIL

In response to frequent expression of need, Engineering Council announces the establishment of a National Legislative and Departmental Information Service for engineers in all branches of the Profession. Information relative to engineering statistics, research, and construction, as well as of matters before Congress involving engineering considerations, will be furnished without charge by addressing M. O. Leighton, National Service Representative of Engineering Council, 502 McLachlen Building, Washington, D. C. This National Service Department of Engineering Council announces that its office at Washington is open to members of the Society at all times, and that accommodations can be had there at short notice for committee meetings of the Society, or of any organization in which the Society is interested, which may be held in Washington.

### Standardization of Rolled Steel Sections

The Sectional Committee on Steel Shapes organized under the auspices of the American Engineering Standards Committee has been giving careful consideration to the entire routine of structural practice in the United States not only as it affects the profiles of structural shapes themselves, but also as regards order practice, calculation and publication of weights, areas and properties, etc., with the idea to insure as far as possible a complete accord between makers and users wherever the sections rolled in English-speaking lands are used. At its meeting held on April 27th, 1920, it formulated its recommendations for submission to its sponsor organizations, to the American Engineering Standards Committee and to the British Engineering Standards Association as a basis for common Anglo-American standards, and its conclusions are now before these organizations for further discussion and endorsement. The essential features of these recommendations are:

- "1. The adoption of the decimal system for the expression of dimensions, thicknesses and other elements of order practice.
- "2. The adoption as an Anglo-American standard of the standard order practice adopted by the Association of American Steel Manufacturers on February 20th, 1920, under which structural shapes are to be ordered by weights per foot and not by thickness.
- "3. The adoption as an Anglo-American standard of American standard practice as it relates to ranges of thicknesses, methods of computation and methods of publication.
- "4. The adoption of definite ranges in thicknesses of angles and other structural shapes, under which are established two zones of variations between minimum and

maximum thicknesses. Under 0.60 in. thick, variations are fixed at four one-hundredths inch (0.04 in.) and above 0.60 in. thick at eight one-hundredths inch (0.08 in.).

"5. Included in the list of angles is an equal angle ( $9 \times 9$ ) and four unequal angles ( $8 \times 4$ ,  $9 \times 4$ ,  $9 \times 6$  and  $10 \times 4$ ) which are not now rolled in the United States, but are subject to the considerations which weigh with manufacturers when new rolls are contemplated.

"6. The adoption of a new line of bulb angle sections as proposed by the British Engineering Standards Association that are recommended on account of their greater efficiency as compared with present British and American standards.

"7. The adoption of a single line of channel sections with a  $5^\circ$  flange taper to displace the present two American lines, the structural line with its flange taper  $9^\circ 27' 42''$  and the shipbuilding line with its flange taper of 2 degrees. This line of channel sections is not quite in accord with that proposed by the British Engineering Standards Association, but is believed to be more suitable to the requirements of the American trade and better proportioned.

"8. The adoption of a new line of beam sections to take the place of the present American standards adopted in 1896. These sections have wider flanges than present American standards and do not agree very closely with the British proposals, but are believed by the Sectional Committee to be more nearly in accord with the recent developments in the fabrication of buildings and bridges."

The foregoing recommendations, now before the sponsor organizations for their consideration and awaiting further action by the British Engineering Standards Association, have developed somewhat as follows:

For some time the British Engineering Standards Association had given consideration to a revision of the British standard rolled sections for structural purposes, and their recommendations were shown in a pamphlet, designated *C L 7 777*, published in London in November, 1919. Some time previous to this publication, this Association had been in communication with the American Engineering Standards Committee and suggested that the American Committee co-operate with the British Association with a view to agreeing, if possible, on common standards for rolled sections used for structural purposes. The American Engineering Standards Committee formed a Sectional Committee on Steel Shapes, composed of the following:

American Bureau of Shipping: C. A. McAllister, David Arnott, John Martin.  
American Society of Civil Engineers: J. H. Edwards, J. B. French,  
H. G. Balcom, Members, Am. Soc. C. E.

Association of American Steel Manufacturers: R. B. Woodworth, G. H. Blakeley, George E. Thackray, Members, Am. Soc. C. E.

Society of Naval Architects and Marine Engineers: F. T. Llewellyn, M. Am. Soc. C. E., E. H. Rigg, J. W. Stewart, Assoc. M. Am. Soc. C. E.

United States Navy: Commander, C. M. Simmers; Lieutenant-Commander, H. R. Rouzer.

Railway Car Manufacturers' Association: A. E. Ostrander.

At a meeting held on February 24th, 1920, Mr. Woodworth was elected permanent Chairman of this Sectional Committee, and the foregoing recommendations were issued on April 27th with the title "Proposals Formulated by the Sectional Committee on Steel Shapes under the Auspices of the American Standards Committee for Submission to its Sponsor Organizations, to the American Engineering

Standards Committee and to the British Engineering Standards Association as a Basis for Common Anglo-American Standards". The recommendations of the Committee of the American Society of Civil Engineers in connection with these proposals are indicated by the following report submitted to the Sectional Committee:

**REPORT OF COMMITTEE ON PROPOSED ANGLO-AMERICAN STANDARDS.**

"The Committee designated by the American Society of Civil Engineers to consider the proposed Standardization of Rolled Steel Sections, met for the first time with the Joint Committee on February 24th, 1920. The reports of the Association of Steel Manufacturers, American Bureau of Shipping, The Society of Naval Architects and Marine Engineers, and the proposals for New British Sections as shown in pamphlet C L 7777, were considered and discussed.

"By request of the Joint Committee the representatives of the American Society of Civil Engineers submit the following observations from the viewpoint of users of structural steel sections for buildings, bridges and other engineering structures. They are heartily in accord with the ideas expressed by other Committees at the joint meeting on February 24th, when it was agreed that:

"(a) Structural shapes and plates when ordered from mills should be specified by their depth and width dimensions and weight per unit foot.

"(b) All cross sectional dimensions should be expressed in decimals, the multiple of variation in thickness to be 0.04 in.

"(c) It would be desirable if an agreement by the American and British manufacturers could be reached on common standards, provided that the standards determined upon could be furnished by American rolling mills without any appreciable increase in cost or reduction in the amount of production.

"We submit for the consideration of the Joint Committee, the following suggestions as to dimensions of profiles and weights of the sections for structural purposes:

"1.—ANGLES.—The list of angles given herewith comprises in our opinion all the angles commonly required for structural purposes. We believe that the addition of the 9-in. angle to the list rolled by American mills would be welcome, and if such angles were produced, in all probability the use of the 8 X 8-in. would be reduced. The dimensions of the angles marked with a star, being seldom used for structural purposes, might be listed as special.

Even Legs.			
2 X 2 .....	( $\frac{1}{8}$ )	0.20 to ( $\frac{3}{8}$ )	0.36
2 $\frac{1}{2}$ X 2 $\frac{1}{2}$ .....	( $\frac{1}{4}$ )	0.24 to ( $\frac{7}{16}$ )	0.40
3 X 3 .....	( $\frac{1}{4}$ )	0.24 to ( $\frac{1}{2}$ )	0.52
3 $\frac{1}{2}$ X 3 $\frac{1}{2}$ .....	( $\frac{5}{16}$ )	0.32 to ( $\frac{7}{16}$ )	0.60
4 X 4 .....	( $\frac{5}{16}$ )	0.32 to ( $\frac{3}{8}$ )	0.76
6 X 6 .....	( $\frac{7}{16}$ )	0.44 to ( $\frac{3}{8}$ )	0.92
8 X 9 .....	( $\frac{3}{8}$ )	0.60 to (1 $\frac{1}{8}$ )	1.16
9 X 9 .....	( $\frac{3}{8}$ )	0.60 to (1 $\frac{1}{8}$ )	1.24

**Uneven Legs.**

2 $\frac{1}{2}$ X 2 .....	( $\frac{3}{16}$ )	0.20 to ( $\frac{3}{8}$ )	0.36
*3 X 2 .....	( $\frac{1}{4}$ )	0.24 to ( $\frac{3}{8}$ )	0.40
3 X 2 $\frac{1}{2}$ .....	( $\frac{1}{4}$ )	0.24 to ( $\frac{3}{8}$ )	0.40
3 $\frac{1}{2}$ X 2 $\frac{1}{2}$ .....	( $\frac{1}{4}$ )	0.24 to ( $\frac{7}{16}$ )	0.48
3 $\frac{1}{2}$ X 3 .....	( $\frac{5}{16}$ )	0.28 to ( $\frac{1}{2}$ )	0.52
4 X 3 .....	( $\frac{5}{16}$ )	0.28 to ( $\frac{1}{2}$ )	0.52
*4 X 3 $\frac{1}{2}$ .....	( $\frac{5}{16}$ )	0.32 to ( $\frac{5}{16}$ )	0.60
*5 X 3 .....	( $\frac{5}{16}$ )	0.28 to ( $\frac{7}{16}$ )	0.52

5	$\times$	3 $\frac{1}{2}$	.....	( $\frac{5}{16}$ )	0.36 to ( $\frac{1}{2}$ )	0.68
6	$\times$	3 $\frac{1}{2}$	.....	( $\frac{3}{8}$ )	0.36 to ( $\frac{5}{8}$ )	0.68
6	$\times$	4	.....	( $\frac{3}{8}$ )	0.40 to ( $\frac{3}{4}$ )	0.76
*8	$\times$	4	.....	( $\frac{1}{2}$ )	0.52 to (1)	1.00
8	$\times$	6	.....	( $\frac{5}{8}$ )	0.52 to (1 $\frac{1}{8}$ )	1.08
*9	$\times$	4	.....	( $\frac{5}{8}$ )	0.60 to (1 $\frac{1}{8}$ )	1.08
9	$\times$	6	.....	( $\frac{5}{8}$ )	0.60 to (1 $\frac{1}{4}$ )	1.24

"Thickness of all angles up to  $\frac{1}{2}$ -in. thickness to vary by 0.04, over  $\frac{1}{2}$  in. by 0.08.

2.—I-BEAMS.—Aside from a slight increase in the width of the flange of some of the American Standard I-beams, we have no specific recommendations to make. The flatter the slope of the flange, the more desirable the section would be, but this is not an element of material importance. The profiles of the British Standard Sections are quite acceptable, providing the flange of some of the beams be made wider. We submit for the consideration of the Committee I-beams of the following dimensions, leaving the detail of the profile to be determined by the necessities of the rolling mills.

Dimensions, in inches.		Weight per foot, in pounds.			
27	$\times$	8	.....	95 to 125	
24	$\times$	7 $\frac{1}{2}$	.....	80 to 110	
21	$\times$	7	.....	65 to 90	
18	$\times$	6 $\frac{1}{2}$	.....	55 to 80	
15	$\times$	6	.....	45 to 70	
12	$\times$	5 $\frac{1}{2}$	.....	35 to 50	
10	$\times$	5	.....	25 to 40	
9	$\times$	4.8	.....	22 to 35	
8	$\times$	4 $\frac{1}{2}$	.....	19 to 30	
7	$\times$	4.2	.....	16 to 25	
6	$\times$	4	.....	13 to 20	
5	$\times$	3.6	.....	11 to 15	

"From the list above it will be noted that the 20-in. beam has been omitted and a beam 21 in. deep substituted. We feel that it would be much better to vary the depth of the beams above 12 in. by multiples of 3 in.

“3.—CHANNELS.—The 5° slope of flange proposed in British Standards and approved by the shipbuilders would be desirable, and an increase in the width of the flanges of some of our American Standard Channels would also be of great advantage. We therefore recommend that a flatter slope of flange approximating the British Standard be agreed upon, between shipbuilders and the rolling mills, and suggest for the Committee's consideration channels of the following dimensions:

Dimensions, in inches.		Weight per foot, in pounds.			
18	$\times$	4	.....	45 to 60	
15	$\times$	4	.....	35 to 50	
12	$\times$	3 $\frac{1}{2}$	.....	25 to 40	
10	$\times$	3	.....	18 to 30	
9	$\times$	3	.....	16 to 25	
8	$\times$	3	.....	14 to 22	
7	$\times$	3	.....	12 to 20	
6	$\times$	3	.....	10 to 15	
5	$\times$	2 $\frac{1}{2}$	.....	8 to 13	
4	$\times$	2	.....	7 to 10	

"In giving the dimensions of the profiles of all of the above sections we feel that they should be considered as nominal, and that the weight per linear foot

should be given in full pounds for I-beams and Channels, and in pounds and tenths of pounds for angles.

"AMERICAN SOCIETY OF CIVIL ENGINEERS COMMITTEE

J. H. EDWARDS, *Chairman.*

H. G. BALCOM,

J. B. FRENCH."

### Division of Engineering, National Research Council

The General Electric Company has recently appropriated \$30 000 for the extension of research into fatigue phenomena of metals to include nickel steels. This research, under the joint auspices of the Division of Engineering of National Research Council, the University of Illinois and Engineering Foundation, as already announced,\* has been in progress about six months, its chief financial support hitherto being \$30 000 appropriated by Engineering Foundation and the equivalent of \$6 000 per year in service and other accommodations by the University of Illinois, where the experiments are being conducted. No restriction upon free publication of results is made by the General Electric Company. This new donation is cited as an example of the appreciation of the value to industry of such fundamental researches and a promising indication of a generous, broad-minded spirit on the part of the officials of the corporation concerned.

Under a new plan of organization of the Division of Engineering there will be in each field (electrical, mining, etc.) a large representative Advisory Committee, with a working Executive Committee under which the several research committees in that field will be organized. Committees will be approved and added as subjects are submitted with a sufficiently convincing statement of the need for research. In all cases basic rather than commercial researches are desired, the results to serve as a basis for the solution of specific engineering or industrial problems.

The various active committees of the Division of Engineering—by some of which the work is practically completed, while those on highways and roads are just being organized, and others have work in active progress—are as follows:

#### ACTIVE COMMITTEES.

- On Elimination of Inclusions from Steel. Henry D. Hibbard, Chairman.
- On Elimination of Sulphur in Open Hearth Practice. Frederick Crabtree, Chairman.
- On Electric Insulation. F. B. Jewett, Chairman.
- On Heat Treatment of Carbon Steel. Henry M. Howe, Chairman.
- On Fatigue Phenomena of Metals. H. F. Moore, Chairman.
- On New Hardness Testing Machine. H. E. Whittemore, Chairman.
- On Steel Ingots. W. P. Barba, Chairman.
- On Physical Changes in Iron and Steel Below the Thermal Critical Range. Zay Jeffries, Chairman.
- On Neumann Bands. C. E. Munroe, Chairman.
- On Pulverizing. Galen H. Clevenger, Chairman.
- On Pyrometers. George K. Burgess, Chairman.
- On Substitute Dioxidizers. J. R. Cain, Chairman.
- On Uses of Alloy Steels. J. A. Mathews, Chairman.
- On Uses of Tellurium and Selenium. Arthur E. Hall, Chairman.

\* *Proceedings, Am. Soc. C. E., January, 1920, p. 67.*

On Uses of Cadmium. Chas. F. Fulton, Chairman.

On Welding. (The American Bureau of Welding, Comfort A. Adams, Director, Committees on Electric Welding, F. E. Farmer, Chairman, and on Gas Welding, S. W. Miller, Chairman.)

On Core Losses. A. E. Kennelly, Chairman.

On High-Speed Tool Steel. J. V. Emmons, Chairman.

On Economic Theory of Highway Improvement. T. R. Agg, Chairman.

On Structural Design of Roads. A. T. Goldbeck, M. Am. Soc. C. E., Chairman.

On Character and Use of Road Materials. H. S. Mattimore, Assoc. M. Am. Soc. C. E., Chairman.

#### CO-OPERATING COMMITTEES.

The following committees have been organized by the American Society for Testing Materials, and include the following representatives of the Engineering Division:

Joint Committee for the Investigation of Sulphur and Phosphorus in Steel. John H. Hall.

Committee A-8 on Magnetic Analysis. R. L. Sanford.

#### OFFICERS AND MEMBERSHIP.

The officers of the Division, elected to serve for one year beginning July 1st, 1920, are as follows:

Honorary Chairman, Henry M. Howe; Chairman, Comfort A. Adams, who has been granted a year's leave of absence from Harvard University; Vice-Chairman, Galen H. Clevenger; Secretary, William Spraragon.

The membership of the Division, the office of which is in the Engineering Societies Building, New York City, is now as follows:

American Society of Civil Engineers: Anson Marston, H. Hobart Porter, and George S. Webster, Members, Am. Soc. C. E.

American Institute of Mining and Metallurgical Engineers: Allen H. Rogers, Benjamin B. Thayer, and Joseph W. Richards.

American Society of Mechanical Engineers: Arthur M. Greene, Jr.; John H. Barr, D. S. Jacobus.

American Institute of Electrical Engineers: Comfort A. Adams, Frank B. Jewett, and Willis R. Whitney.

American Society for Testing Materials; George K. Burgess and J. A. Capp. Illuminating Engineering Society: Edward P. Hyde.

Western Society of Engineers: Arthur N. Talbot, Past-President, Am. Soc. C. E.

Society of Automotive Engineers: Charles F. Ketterling.

American Society of Heating and Ventilating Engineers: John R. Allen.

American Society of Refrigerating Engineers: Walter Rautenstrauch.

The following are members at large: T. R. Agg, Edward Dean Adams, J. J. Carty, Gano Dunn, F. G. Cottrell, Galen H. Clevenger, Henry M. Howe, John Johnston, A. E. Kennelly, T. H. MacDonald, Van H. Manning, Charles F. Rand, A. A. Stevenson, Bradley Stoughton, S. W. Stratton, Ambrose Swasey, William R. Walker, and Arthur P. Davis, President Am. Soc. C. E.

#### Swiss Engineers Visit This Country

A group of twelve civil engineers from Switzerland arrived in New York City on May 27th, 1920, with the so-called "Swiss Economic Tour", which consisted of a party of about seventy including, in addition to the civil engineers mentioned, nine mechanical and electrical engineers, forty business men and man-

ufacturers, five architects, and nine agriculturists. Due to delay in France because of the strike of dock workers, the time for the trip to the United States had to be reduced from 56 days, as planned, to 39 days, with the result that only a relatively short stay in each city was possible, and the visit to Chicago had to be omitted.

As arranged for in advance by the Secretary, M. Nuescheler, Chief Engineer of the Bally Manufacturing Shoe Company, Switzerland, the cities visited included: New York, 10 days; Philadelphia, 2 days; Washington, 2 days; Pittsburgh, 5 days; Dayton, 2 days; Cincinnati, 1 day; Detroit, including Ann Arbor and Jackson, Mich., 3 days; Cleveland, 3 days; Buffalo and Niagara Falls, 4 days; Rochester, 2 days; Syracuse, 1 day; and Albany, including Gloversville, 2 days. Col. H. Peter, Director of the Zurich Water Supply, was President of the tour, and Prof. K. E. Hilgard, M. Am. Soc. C. E., was Vice-President and Chairman of the Civil Engineer group.

In New York City, a committee consisting of Allen Hazen, Chairman, H. S. Crocker, and J. Waldo Smith, Members, Am. Soc. C. E., arranged for the reception of the Civil Engineer group. On May 28th, George W. Kittredge, M. Am. Soc. C. E., conducted the whole party through the Grand Central Terminal Station. On June 1st, the Civil Engineers visited the New York Water-Works, and a trip was made by automobile to Hillview Reservoir and Kensico Dam, the Kensico Aerator, the old Croton Dam, and other points of interest, the party being conducted by Col. Merritt H. Smith, M. Am. Soc. C. E., and Messrs. J. Waldo Smith and Allen Hazen. An excursion on June 2d was conducted by J. A. Bensel, Past-President, Am. Soc. C. E., and T. F. Keller, M. Am. Soc. C. E., Chief Engineer of the Department of Docks and Ferries, about 20 enjoying the hospitality of the Hon. Murray Hulbert, Commissioner of Docks and Ferries, on a boat furnished by the city for visiting the harbor and various harbor works in process of completion, including the Army Supply Base in South Brooklyn.

On June 3d, the party inspected the New York Subways with D. L. Turner, M. Am. Soc. C. E., Chief Engineer of the Public Service Commission, assisted by G. H. Pegram, Past-President, Am. Soc. C. E., and Robert Ridgway, M. Am. Soc. C. E.; in the afternoon the East River bridges and the Hell Gate Arch Bridge were visited through the courtesy of Edward A. Byrne, M. Am. Soc. C. E., Chief Engineer of the Department of Plant and Structures, city automobiles being furnished for the party. A. L. Davis, M. Am. Soc. C. E., explained the method of erecting the Hell Gate Arch Bridge. On June 4th, Rudolph P. Miller, M. Am. Soc. C. E., conducted the party to building and foundation work of various types throughout the city, and on June 5th, some of the Civil Engineers visited the Little Falls filters of the East Jersey Water Company, conducted by H. M. Pirnie, Assoc. M. Am. Soc. C. E., under the direction of J. H. Cook, M. Am. Soc. C. E.

At dinner at the Hotel Pennsylvania on the evening of June 3d, Prof. Hilgard thanked the American engineers for their hospitality, and Mr. Hazen, speaking for the Society, expressed the pleasure of the membership in being able to entertain the guests from Switzerland and have the opportunity to show them engineering work in New York City. The Society and all the guests at the dinner were presented with an engraved copy of a statement of the appreciation of the visitors.

From New York City the party went to Philadelphia, Pa., where on June 7th and 8th, 1920, they were the guests of the Philadelphia Chamber of Commerce, the Engineers' Club of Philadelphia, and the Philadelphia Section of the American Society of Mechanical Engineers.

The first day was devoted to an inspection trip on the Delaware River during which the party visited the various shipyards, bridges, etc. Stops were also made at the U. S. Army Supply Base, the League Island Navy Yard, the Hog Island Shipyards, etc. In the afternoon the party visited Independence Hall and inspected the plant of the Curtis Publishing Company.

In the evening the Mission was tendered a reception at the Philadelphia Chamber of Commerce, where addresses were made by Mr. Howard B. French, Chairman of the Foreign Trade Committee, and ex-President of the Chamber of Commerce, and the Hon. E. J. Cattell, Statistician of the City of Philadelphia, and by Prof. Hilgard on the part of the Mission.

On Tuesday, June 8th, the Civil Engineers, the Architects, and the Industrial Group as a whole, were shown over the principal works of engineering interest of Philadelphia. Under the auspices of a committee of members of the Society consisting of Messrs. Richard L. Humphrey, Chairman, Joseph C. Wagner, George S. Webster, Henry H. Quimby, Carleton E. Davis, John A. Dunlap, and C. F. Puff, Jr., the party examined the Filtration Plant, the Sewage Plant, a number of bridges, the docks and harbor facilities, the City Hall Station of the Subway System, the railroad terminals, and the tower of City Hall. The entertainment also included visits to Independence Hall and the University of Pennsylvania, as well as an automobile trip over the boulevard system encircling the City of Philadelphia.

In the evening the entire party was tendered an informal dinner at the Engineers' Club of Philadelphia.

In many of the other cities visited, in addition to the entertainments by Chambers of Commerce, etc., the Engineering Group was taken in charge by committees of members of the Local Sections of the Society, through whose courtesy visits were made to many interesting civil, electrical, and mechanical engineering works.

From Albany, N. Y., the last city visited in the United States, the party went to Montreal, Que., some of the Civil Engineers also going to Shawinigan Falls and Grand Mère, on the St. Maurice River, and thence to Quebec, Que., Canada, sailing for home from the latter city, on July 7th, 1920, on the steamship *Victorian*.

#### National Public Works Department Association Issues Appeal

Stating that excellent progress has been made in the campaign for a Department of Public Works, the National Public Works Department Association has issued, through its Secretary, M. O. Leighton, M. Am. Soc. C. E., an appeal to engineers for active support during the next six months, outlining the best methods for continuing its campaign in view of the lessons learned from the failure of Congress to pass the Jones-Reavis bill. The following extracts are taken from this appeal:

"Not by way of criticism, but of friendly counsel, it may be helpful to illustrate the most important deficiency in our campaign. Some months ago the United

States Chamber of Commerce submitted a referendum to its constituent bodies on the public works matter. The work of the officers of the National Public Works Association was necessarily confined to the giving of due notice and warning to the member organizations and campaign committees. Several such warnings were sent out and detailed suggestions were submitted for use in carrying the matter before the local Chambers of Commerce. The occasion furnished an opportunity for the technical men of the country to demonstrate their local interest and power. Hardly one of them could have failed to reach and favorably influence his local chamber had he chosen to do so. Nevertheless, the results of the referendum were that of 1250 member organizations located all over the country, only 477 recorded votes. In response to Question No. 1 of the referendum, *viz.*: 'Shall a Department of Public Works Be Established by the Federal Government', the weighted vote was 826 in favor and 549 against. The referendum was, therefore, adverse because the number of votes necessary to carry was 917. We have knowledge that a number of important Chambers of Commerce voted adversely because the matter was not adequately explained by the local advocates of the movement. Nearly two-thirds of the member organizations of the National Chamber failed to take action on the subject. The result is plainly due to lack of effort on the part of those who have given the principle their most enthusiastic approval.

"Some of the members of the Senate and House of Representatives are at home and the remainder will arrive there soon. Therefore, an opportunity still exists for the technical men of the country to make good. Go to see your Congressman and Senator at his home and tell him of your interest in the movement. The principles underlying it are easy to advocate. Even a cold presentation of the facts is convincing and there can be no possible excuse for the technical men of the country if, when the members of both Houses of Congress gather in Washington on the first Monday of next December, the great majority of them are not convinced of the necessity of aggressive action in the furtherance of the public works bill.

"The Washington office of this organization has distributed facts, arguments and talking points very liberally, and is prepared to respond to all further requests. The officers of this organization cannot, however, force the literature upon the technical men nor by mandate secure their interested co-operation. The next six months will tell the story and the issue is squarely up to the advocates of the Public Works Department. If, at the end of that period, the great body of citizens who are interested in Governmental efficiency shall have failed, it is safe to say that this great and praiseworthy effort will also fail. The technical men of the country will have reason to be convinced that they are not yet ready for the full duties of citizenship and will be forced to regard the whole matter as another illustration of wasted opportunity. Therefore, do not fail. Get together with your friends and convince your members of Congress while they are at home."

#### **Engineering Foundation and an American Hydraulic Laboratory**

Certain engineers have recently proposed an endowed American Hydraulic Laboratory. There are many needed contributions to hydraulic engineering and the underlying science which can best be made by a laboratory with sufficient resources. Numerous problems relating to power development, water supply, irrigation, sewerage, river improvement, and other practical applications of hydraulics await solution by the work of competent experimenters in such a laboratory.

In Engineering Foundation there exists the instrumentality for bringing into existence such a laboratory as is suggested. To the limit of its small resources Engineering Foundation during the past year supported Clemens Herschel, Past-President, Am. Soc. C. E., in experiments on weirs, which resulted in an improved form of weir and a simple straight-line formula. The Engineering Foundation

Board is thoroughly competent to receive and administer endowment funds in any amount, including those which might be especially designated for an American Hydraulic Laboratory. Furthermore, the Foundation could undertake the establishment and management of such a laboratory and could publish, through the journals of its supporting societies, the technical press, and its own bulletins, the results of the experimental work.

Instead of creating a new laboratory it might be found advisable for Engineering Foundation, if funds should be provided, to serve as an American Hydraulic Institute. The Institute could enlarge the usefulness of the existing hydraulic laboratories of the universities, Government facilities, and the industries by directing experimenters and allocating problems to the laboratory best equipped for each specific project undertaken. It could contribute to the support of the experimenter, and, if existing facilities were not adequate, could improve the facilities in the laboratory selected for the work.

As the instrumentality of its Founder Societies, Engineering Foundation is ready in this respect to serve the Profession and the industries connected with hydraulic engineering, and to apply the generous gifts of individuals or corporations to the needs of the Profession and these industries. J. Waldo Smith and Silas H. Woodard, Members Am. Soc. C. E., have consented to serve as a Committee on Hydraulic Research to endeavor to formulate problems to which it may be possible for Engineering Foundation to devote some of its efforts. The Committee will also endeavor to collect information about existing hydraulic laboratories and other places in which hydraulic experiments can be conducted.

#### Senate Committee on Reconstruction and Production

The United States Senate on April 15th, 1920, passed a resolution (Sen. Res. 350) introduced by Senator Calder, of New York, whereby a Special Committee was authorized as follows:

"Whereas, The general construction of houses, manufacturing establishments, and buildings necessary for the development of the Nation's resources, the production of essential materials, and the amelioration of present housing conditions, was curtailed by Federal action during the war and is now seriously hampered by an unprecedented demand for consumables and luxuries which has diverted capital, labor, and materials into non-productive or non-essential fields: Therefore be it

"Resolved, That a committee of five Senators, consisting of three members of the majority party and two members of the minority party, appointed by the President of the Senate, is hereby authorized to inquire into and report to the Senate on or before December 1st, 1920:

"(a) The existing situation in relation to the general construction of houses, manufacturing establishments, and buildings, and the effect thereof upon other industries and upon the public welfare; and

"(b) Such measures as it may deem necessary to stimulate and encourage such construction work, to encourage popular investment rather than spending, to foster private initiative in building, and to insure co-operation between labor and persons or corporations engaged in transportation, banking, or other business necessary to the development of such construction."

Under the provisions of this resolution the Committee, consisting of Senator Calder, Chairman, Senator Kenyon of Iowa, Senator Edge of New Jersey, Senator Wolcott of Delaware, and Senator Gay of Louisiana, has been holding hearings

in two of the Society's rooms in the Engineering Societies Building, New York City. At a meeting of the Executive Committee of the Board of Direction on June 26th, in response to a request by Senator Calder for active co-operation on the part of the members of the Society, Paul G. Brown, M. Am. Soc. C. E., was designated to act as the Society's representative to co-operate in the work of this Committee.

Hearings are now continuing in New York City, and the Committee desires assistance in securing information as to existing conditions and would appreciate aid from members of the Society, particularly in the nature of accurate facts regarding the building situation and difficulties in obtaining building materials. It plans to make the people realize, as soon as possible, the magnitude and character of the physical reconstruction for which the country must equip itself.

As the work of physical reconstruction is primarily the task of engineers, their prosperity as well as the prosperity of the country as a whole being dependent thereon, members of the Society are urged to extend their support and to give technical information to the Committee in order that its report in December may be of real constructive value.

#### Organizing New York Chapter of "American Officers of the Great War"

All officers or ex-commissioned officers of the World War are eligible to become members of the "American Officers of the Great War", a service organization similar in character to the Society of the Cincinnati which was formed by the officers of the Colonial Army at the close of the Revolution, and to the Military Order of the Loyal Legion, composed of officers who served in the Civil War. It seeks to bind together those who served as commissioned officers in the greatest struggle of history.

At a meeting held on May 12th, 1920, in New York City, the temporary organization of a New York Chapter was effected. The General Staff has fixed 10% of the potential membership in any community as the minimum number for which a charter will be issued. In order to build up a full membership in the local chapter in New York, the following notice has been issued:

"All ex-officers of the Great War who served in the Army, Navy and Marine Corps will please communicate with Major D. M. Oltarsh, 37 E. 27th Street, New York City, relative to joining the New York Chapter of the American Officers of the Great War. Engineer officers are urged to get in touch with the Major."

The first National Convention of the organization will be held in Detroit, Mich., on September 7th, 8th, and 9th, 1920.

#### ACTIVITIES OF ENGINEERING COUNCIL

##### Progress by Committee on Classification and Compensation of Engineers

The recommendations of Engineering Council's Committee on Classification and Compensation of Engineers is meeting with general approval, so far as classification is concerned, although the proposed rates of compensation are still a source of disagreement. In a letter accompanying an abstract of the Committee's report,\* Chairman Arthur S. Tuttle, M. Am. Soc. C. E., writes to the Acting Secretary of the Society in part as follows:

\* *Proceedings, Am. Soc. C. E., January, 1920, p. 42.*

"The classification was endorsed by The Municipal Engineers of the City of New York at a meeting of that Society held on May 26th, 1920, at which time a schedule was adopted providing for compensation at a rate approximately 20% greater than that tentatively suggested by the Committee. The classification has been closely followed in the report of the Congressional Joint Commission providing for the Reclassification of Engineers in Federal Service (see *Engineering News-Record*, April 15th, 1920), and it was approved by the Executive Committee of the American Society for Testing Materials on April 13th, 1920. The endorsement of the tentative schedule of compensation was recommended to the Boston Society of Civil Engineers by its Committee on Compensation at a meeting of that Society held on May 19th, 1920, and is now being made the subject of a letter ballot to the full membership. It will thus be seen that substantial progress has been made in bringing about a recognition of Engineering Council's classification as standard.

"In resuming its effort to advance the material as well as the professional interests of members of the engineering profession, the Committee asks that you bring this report to the attention of your members with the request that the classification be formally endorsed by your governing body or by your Society, to the end that it may become generally recognized and put into effect. As to the suitability of the scale of compensation and the employment policy tentatively suggested, the Committee desires the benefit of the views of your Society as a whole and of individual members, which information will be of substantial assistance in enabling it to complete its investigation.

"Through your Society publication or some other convenient means will you please urge your members to report to the Committee any action taken to increase engineers' compensation or to adopt the standard classification? We wish to make information of this sort available to any group of engineers for use in discussing these matters with authorities who have the responsibility for fixing compensation. Through such co-operative action, with this Committee acting as a clearing house for receiving and giving out information, the effectiveness of the work done toward increasing compensation can be very materially advanced."

President Davis, in accordance with the action of the Board of Direction on June 1st, 1920, has appointed a committee of the Society, consisting of Messrs. Lansing H. Beach, Daniel W. Mead, and L. R. Jorgensen, to consider and report on the recommendations of the Committee on Classification and Compensation of Engineers, in view of the request by that Committee for endorsement. This Committee has agreed that the classification is, in general, satisfactory, but has not yet agreed as to the matter of compensation.

#### COMPARISON WITH RECOMMENDATION OF CONGRESSIONAL JOINT COMMISSION.

In its progress report to Engineering Council, presented at the meeting of June 17th, 1920, by Chairman Tuttle, the Committee makes the following statements regarding the report of the Congressional Joint Commission on the Reclassification of Salaries:

"The classification of engineers proposed by the Congressional Joint Commission on Reclassification of Salaries shows that the work of this Commission has been guided largely by the work of your Committee, and a comparison of its recommendations with those of your Committee will be shortly released for publication. It is the belief of the Committee that, to say the least, the Federal Commission's classification where it differs from that of your Committee has no advantage. The compensations for the various positions proposed in the Federal

report are disappointing as they do not provide anything like the increases which are believed by your Committee to be essential to the end that the engineering profession may attract and retain men of proper caliber to assume successfully the responsibilities placed upon it.

"From the analysis it would appear that in the lower grades of Federal service in 16 bureaus the compensations proposed by the Congressional Commission would be from 2 to 19% less than those which have heretofore prevailed, while in the higher grades the increases range from 8 to 17 per cent. The proposed salaries other than those for the grade 'Junior Assistant Engineer' range from 20 to 30% less than those suggested by your Committee."

Discussing work to be undertaken, the report states:

"It is proposed to undertake a vigorous campaign for the purpose of securing recognition of the classification of various positions as recommended by the Committee last year and as adopted by Council on December 18th, 1919, and at the same time to secure a general expression of opinion on the part of engineers and heads of services as to the compensation schedule tentatively suggested by the Committee."

The comparison between the recommendations of Engineering Council's Committee and those by the Congressional Joint Commission referred to in the foregoing has been released and is now available to all who are interested therein.

A letter calling attention to the serious hardships suffered by engineers in all branches of the Profession, due to the decrease in the buying power of the dollar, and accompanying a copy of the abstract of the Committee's report, has been addressed to State Governors, Mayors of the leading cities, Directing Heads of Federal Bureaus having jurisdiction over engineering work, and Civil Service Commissioners. It was signed by Arthur S. Tuttle, Chairman, and Charles Whiting Baker, Secretary, of the Committee.

Engineering heads under these various officials were also addressed. They were asked to advise the Committee as to the practicability of putting the proposed classification, into effect in their organizations. The benefit of such constructive criticism as they have to offer relative to the suitability of the scale of compensation and of the employment policy tentatively proposed was requested, as was also a report of any action taken to increase engineers' compensation or to adopt the standard classification.

#### Trades Jurisdiction over New Building Materials

Engineering Council recently adopted the policy of permitting its representative on the National Board for Jurisdictional Awards in the Building Industry, subject to the approval of the Executive Committee in each case, to submit to the Board, without argument or recommendation, descriptions of new materials, specialties, methods of application, equipment or appliances on which no contention concerning jurisdiction has arisen, so that jurisdictional strife among the trades may be averted through determination by the Board in advance.

Manufacturers and others will have new materials or devices for building construction on which determination of jurisdiction may become necessary. Cases can be submitted to the Board only through its member organizations. Aside from Council, there is no body represented on the Board which can neutrally introduce questions relating to new materials. Without a determination as to

jurisdiction, architects and engineers will hesitate to specify, and builders to use, new materials and devices. Fear of disputes among the trades, with the consequent delay and cost in building operations, would deprive the public of the benefits of new materials or devices and prevent manufacturers from securing a market for their goods. Engineering Council, accordingly, can perform a useful service to the public at large, as well as to interested parties, including the building trades, by submitting to the Board new materials in an impartial manner without argument.

#### Digest of State License Laws

At its meeting on April 29th, 1920, Engineering Council deferred action on the work of the License Committee to await the report of the Joint Committee of Council and the American Institute of Architects, but authorized the Secretary to prepare and keep up to date digests of all State laws regarding the registration of architects, engineers, and land surveyors.

At the meeting on June 19th, a memorandum on progress of legislation was submitted, showing that the licensing or registering of architects, engineers, and surveyors had received attention in 27 States, of which 19 have laws for registration of architects and 3 have this subject under consideration; 11 have laws for licensing engineers and 4 have the matter under consideration; 8 have laws for licensing land surveyors and 2 have the matter under consideration. At the suggestion of the Secretary, he was authorized to offer to member societies and to technical journals, for publication, abstracts of laws for registration and licensing of engineers, architects, and surveyors, with the precautionary note: "Engineering Council does not guarantee the legal accuracy of the digest."

In response to a letter received April 10th from Chairman A. T. Stovall, of the Scope and Program Committee of the National Conference of Commissioners on Uniform State Laws, it was voted that a letter be sent to Mr. Stovall, requesting consideration of uniformity of State legislation on registering and licensing of professional engineers, and giving reasons therefor; and that the Chairman be authorized to designate Mr. Condron to appear before the Scope and Program Committee.

#### Water Conservation Committee

Chairman Townley made a brief verbal report of progress at the meeting, April 29th, 1920, mentioning especially the fact that two States, Maine and New York, had officially asked the advice of Engineering Council in connection with water power development policies, and that letters were being drafted by the Committee to be sent to the Chief Engineer of the Maine Water Power Commission, in the name of Engineering Council.

A communication from the American Society of Civil Engineers referred to Council a report of its Committee on Special Committees, on Water Power Development, recommending that the Civil Engineers should not establish a committee on water power, but should refer such activities to Council. The report was accompanied by a letter from F. W. Scheidenhelm, M. Am. Soc. C. E., suggesting that a committee be created (1) to promote the development of water power; and (2) to serve as a clearing house for information on the subject.

It was voted that the membership of the Water Conservation Committee be increased to care for the activities suggested, and that Col. Scheidenhelm be appointed a member of the Committee.

#### National Memorial Club House

The Army and Navy Club of America, by letter dated March 9th, 1920, from its Executive Chairman, brought to the attention of Engineering Council a project to build a club house in New York City to commemorate the American officers who died in the World War, and to provide for all officers, past, present and future, whenever in New York, a home of their own within their means. On this letter the Military Affairs Committee reported the following action:

"The request of the Army and Navy Club of America for the co-operation of Engineering Council toward the erection of a National Memorial Club House in New York was given careful consideration and the Committee was of the opinion that the object was a worthy one of which it was heartily in favor; but the Committee felt that, as the first necessity was the raising of funds, this was not a proper activity for the Military Affairs Committee to undertake and it would therefore recommend to Engineering Council that either a Special Committee from Engineering Council, or from each of the Founder Societies, be appointed to assist in this matter."

It was voted at Council's meeting on April 29th, that this report be referred to the Member Societies.

#### Payment for Estimating

In October, 1919, the American Institute of Architects, Engineering Council, and Associated General Contractors of America, each appointed three conferees, to discuss the matter of payment for estimating. These conferees agreed upon a report which was submitted to their respective organizations under date of February 17th, 1920, and has since been under consideration by them. Engineering Council at its meeting on June 17th adopted the conclusion in a report of the Special Committee to which the report of the conferees had been referred, as follows:

"Whenever, in the execution of work, competitive bids are asked for on detailed plans and specifications, those invited to bid should be provided with such an estimate of the quantities involved in the work as the surveys, plans and specifications permit to be made. The intent of this requirement is that a single estimate of quantities should be made by or for the engineer, architect, or other representative of the owner, so that each separate bidder will not be put to the expense of making up a separate schedule of estimates. This latter practice not only means a needless waste in the carrying on of contract work, but also discourages bidders and causes needless repeated handling of official plans and specifications in making up separate schedules of estimates."

#### Notes from National Service Department

##### ADVISORY COUNCIL TO U. S. BOARD OF SURVEYS AND MAPS.

The personnel of the Advisory Council to the United States Board of Surveys and Maps has been practically completed. Organizations and their representatives appointed to act in this capacity are as follows:

American Association of State Highway Officials: M. W. Watson, Assoc. M. Am. Soc. C. E., State Highway Engineer, Topeka, Kans.

American Automobile Association: A. G. Seiler, Riggs Building, Washington, D. C.

American Forestry Association: P. S. Ridsdale, Executive Secretary, 1410 H St., Washington, D. C.

American Geographical Society: Dr. Isaiah Bowman, Director, Broadway at 156th Street, New York City.

American Institute of Electrical Engineers: John H. Finney, National Metropolitan Bank Building, Washington, D. C.

American Institute of Mining and Metallurgical Engineers: William Young Westervelt, 522 Fifth Ave., New York City.

American Railway Engineering Association: J. H. Milburn, Office Engineer, Baltimore and Ohio Railroad, Baltimore, Md.

American Society of Agricultural Engineers: F. A. Wirt, Maryland Agricultural College, College Park, Md.

American Society of Civil Engineers: James K. Finch, Assoc. M. Am. Soc. C. E., Columbia University, New York City.

American Society of Mechanical Engineers: J. Waldo Smith, M. Am. Soc. C. E., Chief Engineer, Board of Water Supply, Municipal Building, New York City.

American Water Works Association: Robert E. Horton, M. Am. Soc. C. E., Voorheesville, N. Y.

Association of American Geographers: Prof. N. M. Fenneman, University of Cincinnati, Cincinnati, Ohio.

Association of State Geologists: Wilbur A. Nelson, State Geologist, Nashville, Tenn.

Engineering Council: A. Stuart Baldwin, M. Am. Soc. C. E., Vice-President, Illinois Central Railroad, Chicago, Ill.

National Electric Light Association: I. E. Moulthrop, Edison Illuminating Company, Boston, Mass.

National Research Council: E. B. Mathews, National Research Council, Washington, D. C.

Rocky Mountain Club: Enos Mills, Estes Park, Colo.

Sierra Club: Prof. Joseph M. Le Conte, 19 Hillside Court, Berkeley, Cal.

Society of Automotive Engineers: C. H. Young, 210 Riggs Building, Washington, D. C.

Geological Society of America: Dr. George H. Ashley, State Geologist, Harrisburg, Pa.

Organization was effected at a meeting in Washington, D. C., on July 12th, 1920, and the following Executive Committee appointed:

E. B. Mathews, Chairman; A. G. Seiler, Secretary; William A. Nelson, A. Stuart Baldwin, and J. H. Milburn.

A meeting of the Board to receive reports is scheduled for September 14th, 1920, in Washington.

#### ARMY AERONAUTIC ENGINEERING TRAINING.

The bill providing for the study of aeronautic engineering has finally become law. It gives the Secretary of War authority to detail not more than twenty-five

officers of the Army to pursue aeronautic engineering or associate study at such schools, colleges, and universities as he may select.

The Secretary of War is authorized to pay the tuition and expenses of supplies involved in the training of these officers.

This legislation is intended to bring to the Army the advantages of the developments that have recently been the source of careful planning and study in our colleges and universities, and as a result of which comprehensive courses have been laid out.

#### APPOINTMENTS TO INTERSTATE COMMERCE COMMISSION.

Efforts to secure the appointment of an engineer to the Interstate Commerce Commission have failed. President Wilson appointed James Duncan, of Massachusetts, a Vice-President of the American Federation of Labor; Mark W. Potter, of New York, a lawyer and railroad president; and Henry J. Ford, of Princeton, N. J. The Senate refused to confirm these appointments and since the adjournment of Congress these three men have been given recess appointments.

#### EUROPEAN NOTES

*The following notes relative to reconstruction, etc., in Belgium and France, and industrial progress, etc., in Great Britain and elsewhere, have been contributed by W. E. Woolley, Assoc. M. Am. Soc. C. E., of London, England, who is also a Corresponding Member of the Société Centrale d'Architecture de Belgique.*

#### Plan New Town Near London

Plans for the development of the Dagenham estate, on which it is proposed to erect about 24,000 houses within the next five years, have been considered by the London County Council. It is recommended by the Housing Committee that the work should be entrusted to a master contractor who has put forward a tender for a fee of 1½% on the actual cost of the operations. The huge venture involves the creation of a town larger than an ordinary county borough. It is estimated that the expenditure may amount to as much as £30,000,000.

A few particulars of the scheme follow:

Housing accommodations are to be provided for at least 120,000 persons; over twenty schools, five fire stations, four free libraries, several places of amusement, and other public buildings are to be erected; steady employment is to be provided for 10,000 workmen; 2,500 tons of building materials will be used every day.

The site, which is about 3,000 acres in extent, is situated 11 miles east of London, between the Thames River and Hainault Forest. It consists of agricultural and market gardening land, and was acquired for the erection of working-class houses by a compulsory order made by the London County Council and confirmed by the Minister of Health.

Application has been made to the Ministry of Transport to secure improved railway facilities for the locality, and the Ministry is said to be in favor of the scheme, and to have promised to endeavor to extend the present service.

### **Brussels Ship Canal Nearing Completion**

Work on the Brussels Ship Canal is going forward rapidly, and it is hoped that by the end of the year Brussels will be able to rank as a sea port. Excavations have been completed in the section between Willebroeck and Wintham, where the last locks before boats enter the Rupel are located, and only the reconstruction of the bridge of Petit-Willebroeck remains to be carried out. Work on other sections is also in an advanced stage. The locks at Wintham allow the passage of Rhine steamers of from 1,000 to 1,500 tons.

### **May Number Roads in England**

Colored signposts and numbered roads have been considered by the Special Committee consisting of members of the County Surveyors' Society appointed by Sir E. Geddes, Minister of Transport, to inquire into the system of British road-direction. The French system of giving each important road a number may be adopted.

The signposts will bear the numbers of the route in addition to the names of the places indicated. The London-Edinburgh road, for instance, may be No. 10. The motorist as he nears the signpost will look for the arm with the big "10" and follow its direction. Bedford, York, or Alnwick may be the actual name on the signpost arm, but so long as "10" is there he knows he is on the right road.

### **To Link France and Italy by Tunnel**

More direct communication between Central and Southern France and Italy will be obtained when the new Trans-Alpine tunnel, which is favorably regarded by all the interests concerned, has been constructed.

The project will have to receive the formal sanction of the General Council of the Department of the Hautes-Alpes, but it does not seem likely that the latter will put any serious obstacle in the way of the new scheme.

The tunnel is to unite the valley of Terrasse (France) with the valley of Pellec (Italy), and the railway when built will considerably lessen the distance between Lyons and Turin and between Marseilles and Turin. The local Chambers of Commerce warmly support the scheme.

### **Coal from Lens Pit**

The formidable task of the reconstruction of the Lens mines has progressed to the point where, for the first time since the district was overrun by the Germans, coal has been brought up from one of the workings, according to a dispatch from Lille dated June 13th.

It is hoped that the regular exploitation of the upper workings may be resumed about the middle of 1921.

### **China's First Aerial Post**

China's awakening is exemplified in the institution of an aerial postal service. The aeroplane adopted is of the Handley-Page type, and on its first journey carried fifteen passengers, together with the mails, between Peking and Tientsin.

Among the passengers were his Majesty's Minister at Peking, the Hon. Beilby Aston, and members of the British Legation. A special postmark was used for the mails carried on the first journey, and this mark will not be repeated.

#### Institute for Chemical Research

A society has been formed in Paris with the intention of founding, under the name of the "Institut de la Victoire", an important body modeled after the Pasteur Institute and the large American Foundations. It will be a powerful scientific organization, placing at the disposal of competent research workers apparatus which will make possible great progress in national industry.

#### Relation Between Capital and Labor

At a meeting of the "Société des Ingénieurs et Industriels", held in Brussels in May, Count Renaud de Briey gave a lecture on the relation between capital and labor. Various methods of treating this problem were discussed, one of which Count de Briey has recommended in a book written jointly with Aristide Briand. He reached the conclusion that "In modern society, Capital must work, and Labor must possess".

#### BRIEF NOTES

The appointment of Robert M. Watson, M. Am. Soc. C. E., formerly Assistant to Secretary Wilson, as President of United States Housing Corporation, to succeed Leroy K. Sherman, M. Am. Soc. C. E., resigned, has been announced.

During July, 1920, a total of 205 fatalities on the highways of New York State is reported by the National Highways Protective Society. Of these, 169 deaths were caused by automobiles (72 in New York City), 19 were caused by trolley cars (13 in New York City), and 5 by wagons (2 in New York City). Twelve persons were killed at railroad crossings. This record of 205 is the highest ever reported by the Society, exceeding by 12 the record made the previous month.

Two new East River tubes, owned by New York City, were opened to traffic by the Brooklyn Rapid Transit Company on August 1st, 1920; one from White-hall Street, Manhattan, to Montague Street, Brooklyn, and the other from 60th Street, Manhattan, to Long Island City.

At its Annual Meeting in Atlantic City, the United States Chamber of Commerce elected two engineers, Members Am. Soc. C. E., as Directors: Howard Elliot, and L. B. Stillwell, Past-President of the American Institute of Consulting Engineers and of the American Institute of Electrical Engineers, both of New York City.

An overwhelming majority of the Arts and Executive Committee of the Mayor's Committee on Permanent Memorial, New York City, has voted in favor of a bridge across the Hudson River as the form New York's tribute to her soldiers, living and dead, in the World War should take. Gustav Lindenthal, M. Am. Soc. C. E., designer and builder of the Hell Gate Bridge, presented a written argument in support of a Hudson River Bridge.

The U. S. Geological Survey has issued a statement on production of asphalt in the United States in 1919, stating that the asphalt produced from domestic petro-

leum amounted to 600 000 short tons, valued at \$9 000 000, an apparent increase over 1918 of 72 425 tons and of \$1 564 796, respectively.

It is announced that nearly \$150 000 000 worth of enemy-owned property seized during the war will be returned on formal application to owners who fall in classifications entitling them to recover their holdings under the amendment to the Trading with the Enemy Act passed by Congress on June 5th.

Labor unions of eighteen crafts in Baltimore, representing more than 50 000 members, have combined to form a co-operative society owned entirely by union men, which shall own and operate its own stores and factories for the manufacture of a number of articles of everyday necessity, and to establish their own bank.

Reports from Berlin, dated July 26th, state that the German Cabinet has approved the bill providing for disarmament of the civil population, and it will be introduced in the Reichstag at once. The new army bill contains a clause declaring universal compulsory military service abolished and all provisions to the contrary rescinded.

F. A. Wallis, Commissioner of Immigration at Ellis Island, New York City, reports statistics on the immigration situation for the fiscal year ended June 30th, showing that the present situation portends no curtailment of the national foreign labor supply. Although the total departures were 334 254, or 19 786 in excess of arrivals, he declared that the incoming tide of aliens steadily is increasing.

The U. S. Reclamation Service, in its summary of work to December 31st, 1919, shows that projects now under way or completed embrace approximately 3 200 000 acres of irrigable land divided into about 67 500 farms of from 10 to 160 acres each. During the year, water was available from Government ditches for 1 935 278 acres on 41 836 farms, and the Government was under contract to supply water to approximately 1 690 000 acres. The available reservoir capacity at that time was approximately 9 432 000 acre-feet.

The U. S. Bureau of Internal Revenue announces that Internal Revenue taxes collected and deposited during the fiscal year ended June 30th, 1920, amounted to a total of \$5 410 284 874.90, according to compilation made from field reports. This is the greatest annual tax collection made by the Bureau since its establishment in 1862. The cost of collection will approximate 55 cents for each \$100. Revenues received from income and excess profits taxes amounted to \$3 944 555 737.93 and from miscellaneous taxes \$1 465 729 136.97.

The restrictions which have stood in the way of trade and communication with Soviet Russia have been removed by action of the Department of State. Such of these restrictions, however, as pertain to the shipment of materials susceptible of immediate use for war purposes will, for the present at least, be maintained. Political recognition, present or future, of any Russian authority exercising or claiming to exercise governmental functions, is neither granted nor implied by this action. Individuals or corporations availing themselves of the present opportunity to trade with Russia will do so on their own responsibility and at their own risk.

## ANNOUNCEMENTS

The Reading Room of the Society is open from 9 A. M. to 10 P. M., every day, except Sundays, New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, and Christmas Day; during July and August, it is closed at 6 P. M.

## FUTURE MEETINGS

**September 1st, 1920.—8.30 P. M.**—This will be a regular business meeting of the Society. A paper by J. A. L. Waddell, M. Am. Soc. C. E., entitled "Bridge versus Tunnel for the Proposed Hudson River Crossing at New York City", will be presented for discussion.

This paper is printed in this number of *Proceedings*.

**September 15th, 1920.—8.30 P. M.**—The usual meeting will be held on this evening, and announcement of the programme will be made later.

**October 6th, 1920.—8.30 P. M.**—A regular business meeting will be held, and a paper by A. W. Robinson, M. Am. Soc. C. E., entitled "Larger Ships, Deeper Harbors, and Better Dredges", will be presented for discussion.

A synopsis of this paper is printed in this number of *Proceedings*.

## ENGINEERING SOCIETIES EMPLOYMENT BUREAU

Engineering Societies Employment Bureau, established December 1st, 1918, as an activity of Engineering Council, is managed by a board made up of the Secretaries of the four Founder Societies, funds for its maintenance being provided by these Societies. The Bureau is co-operating with engineering organizations in all parts of the country and with the Re-employment Bureau under the auspices of the American Legion. It is desirous of increasing such co-operation by working with local engineering associations and clubs. The work of the Bureau since its inception has been largely in the line of securing employment for men retiring from government war service. Members of the American Society of Civil Engineers who desire to register with this Bureau should apply for further information, registration forms, etc., to Walter V. Brown, Manager, Engineering Societies Employment Bureau, First Floor, Engineering Societies Building, 29 West 39th Street, New York City.

## SEARCHES IN THE LIBRARY

As the Library of the American Society of Civil Engineers has been merged in the Engineering Societies Library, requests for searches, copies, translations, etc., should be addressed to the Director, Engineering Societies Library, 29 West 39th Street, New York City, who will gladly give information concerning the charges for the various kinds of service. A more comprehensive statement in regard to this matter will be found on page 21 of the Year Book for 1920.

## PAPERS AND DISCUSSIONS

Members and others who take part in the oral discussions of the papers presented are urged to revise their remarks promptly. Written communications from those who cannot attend the meetings should be sent in at the earliest possible

date after the issue of a paper. Written discussion on a given paper will be closed three months after the paper has been published, so that the author's closure can be printed four months after the paper, and the discussions and closure distributed in pamphlet form.

All manuscript submitted for publication should preferably be typewritten, and always double spaced. Drawings and diagrams should be on separate sheets, drawn to a scale suitable for about one-half to one-fourth reduction.

All papers accepted by the Publication Committee are classified by the Committee with respect to their availability for discussion at meetings.

Papers which, from their general nature, appear to be of a character suitable for oral discussion will be set down for presentation to a future meeting of the Society, and, on these, oral discussion, as well as written communications, will be solicited.

All papers which do not come under this heading, that is to say, those which from their mathematical or technical nature, in the opinion of the Committee, are not adapted to oral discussion, will not be scheduled for presentation to any meeting. Such papers will be published in the same manner as those which are to be presented at meetings, but written discussions only will be requested for subsequent publication and with the paper in the volumes of *Transactions*.

The Board of Direction has adopted rules for the preparation and presentation of papers, which will be found on page 35 of the Year Book for 1920.

### LOCAL SECTIONS OF MEMBERS OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS

#### San Francisco Section, Organized 1905.

M. M. O'Shaughnessy, President; Nathan A. Bowers, Secretary-Treasurer, 531 Rialto Building, San Francisco, Cal.

The San Francisco Section of Members of the American Society of Civil Engineers holds regular bi-monthly meetings, with banquet, and weekly informal luncheons. The former are held at 6 p. m., at the Engineers' Club, 57 Post Street, on the third Tuesday of February, April, June, August, October, and December, the last being the Annual Meeting of the Section.

Informal luncheons are held at noon, every Wednesday, at the Engineers' Club, where special tables are reserved for members and guests of the Section.

The by-laws of the Section provide for the extension of hospitality to any member of the Society who may be temporarily in San Francisco, and any such member will be gladly welcomed as a guest.

#### Colorado Section, Organized 1908.

Oliver T. Reedy, President; John S. Means, Secretary-Treasurer, 1563 Downing Street, Denver, Colo.

The meetings of the Colorado Section of Members of the American Society of Civil Engineers (Denver, Colo.) are held on the second Monday of each month, except July and August. The hour and place of meeting are not fixed, but this information will be furnished on application to the Secretary. The meetings are usually preceded by an informal dinner. Members of the American Society of Civil Engineers will be welcomed at these meetings.

Weekly luncheons are held on Wednesday, at 12.30 p. m., at Daniels and Fisher's.

Visiting members are urged to attend the meetings and luncheons.

## (Abstract of Minutes of Meetings)

**March 15th, 1920.**—The meeting was called to order at the Denver Athletic Club, at 7.30 P. M.; President W. C. Huntington in the chair; Vice-President O. T. Reedy acting as Secretary; and present, also, 12 members and 1 guest.

The Acting Secretary reported that the vote on the Questionnaire relative to changing the night of the monthly meetings of the Section, showed that the majority of the membership favored such change, and, on motion, duly seconded, the meeting night was changed from Saturday to Monday.

The Questionnaire relative to the report of the Committee on Development, sent out by the Board of Direction of the Society, was informally discussed, and as it was the opinion of those present that further discussion of the subject might be desirable, Mr. Robert Follansbee invited the members of the Section to meet informally at his office on March 29th, 1920, for this purpose.

A paper by Mr. Follansbee entitled, "Some Phases of Run-off in Mountainous Regions in Colorado", was presented by the author, who illustrated his remarks by large drawings and charts. The subject was discussed by the members present.

Adjourned.

**March 29th, 1920.**—The Special Meeting was called to order at Room 403, Federal Building; Vice-President Oliver T. Reedy in the chair; A. N. Miller, Secretary; and present, also, 10 members and 1 guest.

The subject for discussion was the Questionnaire on the report of the Committee on Development, sent out by the Board of Direction of the Society. After a full discussion of the subject, the Chairman was instructed, on motion, duly seconded, to appoint a committee of five to urge all members of the Section to vote on the Questionnaire.

Vice-President Reedy subsequently appointed the following committee: Messrs. C. P. Williams, Chairman, Robert Follansbee, A. E. Palen, Thomas L. Wilkinson, and E. F. Vincent.

Adjourned.

**April 7th, 1920.**—The Special Meeting was called to order at Daniels and Fisher's Tea Room, in connection with the weekly luncheon of the Section.

Mr. F. E. Weymouth addressed the meeting and urged that the members of the Section vote in the affirmative on the Questionnaire on the report of the Committee on Development.

On motion, duly seconded, it was decided to enlarge the Committee of Five appointed to get out the vote of the membership on the Questionnaire, in order to see that all members in District No. 10 cast their votes.

Adjourned.

**April 12th, 1920.**—The meeting was called to order at the University Club; President W. C. Huntington in the chair; A. N. Miller, Secretary; and present, also, 12 members and 2 guests.

The minutes of the meeting of February 14th, 1920, were read and approved.

The Secretary presented a letter from the Cincinnati Section favoring an "Amendment to the Constitution of the Society to provide for Student Chapters in recognized Engineering Colleges throughout the country". No action in the matter was taken by the meeting, but President Huntington suggested that it deserved further consideration.

Mr. Thomas H. Olds addressed the meeting on the subject, "Hydro-Electric Development in Southern Brazil", illustrating his remarks with lantern slides.

Adjourned.

**June 12th, 1920.**—The meeting was called to order at the University Club; C. P. Williams, acting as Chairman; A. N. Miller, Secretary; and present, also, 6 members and 3 guests.

The minutes of the meetings of March 15th, and April 12th, and of the Special Meetings of March 29th and April 7th, 1920, were read and approved.

The report of the Secretary-Treasurer was read and, on motion, duly seconded, was accepted.

Mr. Williams appointed Messrs. Oliver W. Childs and F. D. Hartford a committee to canvass the ballot for the election of officers for the year.

After receiving the report of this Committee, Mr. Williams declared the election of the following officers: President, Oliver T. Reedy; Vice-President, A. N. Miller; and Secretary-Treasurer, J. S. Mean.

The Secretary read a letter from H. S. Crocker, Acting Secretary of the Society, relative to the change of name from "Association" to "Section", as approved by the Board of Direction of the Society. It was decided, on motion, duly seconded, to refer this matter to a subsequent meeting for decision.

A letter from Acting Secretary Crocker, relative to the "Marne Memorial" together with the resolution of the Board of Direction relative to the same, was read by the Secretary, and on request of the Chairman the matter was referred to a committee to be appointed by President Reedy.

The resignation of Mr. Dudley F. Black as a member of the Section, on account of removal from the city, was read and accepted.

The Secretary read communications from C. M. Lightburn, Secretary of the Colorado Engineering Council, and Addison J. McCune, Secretary of the Colorado State Board of Engineer Examiners, relative to the proposed changes in the present Engineers' License Law, in which they suggested the adoption of betterments as contained in the Model Engineering License Law proposed by the National Engineering Council.

At the request of the Chairman, the matter was referred to a committee to be appointed by President Reedy.

A letter from Mr. Homer V. Knouse addressed to Mr. Thomas L. Wilkinson, endorsing the candidacy of Mr. F. T. Darrow as a Director of the Society, together with Mr. Wilkinson's reply thereto, was read by the Secretary.

Maj. W. B. Freeman and J. C. Mitchell, General Manager of the Lock Joint Pipe Company, addressed the meeting on "Reinforced Concrete Pipe Construction". The addresses were illustrated by lantern slides.

Adjourned.

#### **Atlanta Section, Organized 1912.**

V. H. Kriegshaber, President; Park A. Dallis, Secretary-Treasurer, 823 Candler Building, Atlanta, Ga.

Informal luncheons are held for members of the Section on the last Monday of each month, at 12.30 P. M., to which visiting members of the American Society of Civil Engineers will be welcomed. The place is not fixed, but this information will be furnished on application to the Secretary.

#### **Baltimore Section, Organized 1914.**

Ezra B. Whitman, President; George F. Robertson, Secretary-Treasurer, 1628 Linden Avenue, Baltimore, Md.

#### **Cleveland Section, Organized 1914.**

W. P. Brown, President; George H. Tinker, Secretary-Treasurer, 516 Columbia Building, Cleveland, Ohio.

The regular meetings of the Section are held on the second Wednesday of each month, at 12.15 P. M., in the Rooms of the Electrical League, on the Fourteenth Floor of the Statler Hotel. Luncheon is served at these meetings, and visiting members are invited to attend.

## (Abstract of Minutes of Meetings)

**February 11th, 1920.**—The meeting was called to order at the Headquarters of the Section at the Statler Hotel; President W. P. Brown in the chair; George H. Tinker, Secretary; and present, also, 10 members.

The minutes of the meeting of January 14th, 1920, were read and approved.

The Secretary read letters from H. S. Crocker, Acting Secretary of the Society, and Mr. R. L. Humphrey, relative to the report of the Development Committee.

Director Willard Beahan addressed the meeting in regard to the action of the Board of Direction on various matters.

Adjourned.

**February 20th, 1920.**—The Special Meeting was called to order at the Headquarters of the Section at the Statler Hotel; President W. P. Brown in the chair; George H. Tinker, Secretary; and present, also, 30 members and 1 guest.

Mr. R. L. Humphrey addressed the meeting on the report of the Development Committee and the Questionnaire sent out by the Board of Direction.

On motion, duly seconded, the Section approved the efforts of Mr. Humphrey and pledged its support in getting out an affirmative vote on the Questionnaire.

On motion, duly seconded, the Secretary was instructed to request additional ballots for members who had lost or mislaid theirs, or in case extra ballots were not available, authority to have ballots printed.

On motion, duly seconded, the President was authorized to appoint an Executive Committee to take charge of the campaign teams. President Brown subsequently appointed Messrs. E. B. Thomas, Chairman, E. J. Newton, K. H. Osborn, A. F. Blaser and C. W. Harris, with himself and Secretary Tinker as *ex-officio* members.

On motion, duly seconded, the Section decided in favor of an affirmative vote on the first nine questions and a negative vote on No. 7, "Internal Relations", of the Questionnaire sent out by the Board of Direction.

Adjourned.

**March 10th, 1920.**—The meeting was called to order at 12.15 P. M., at the Headquarters of the Section, at the Statler Hotel; President W. P. Brown in the chair; George H. Tinker, Secretary; and present, also, 24 members and guests.

The reports from Team Captains on votes on the Questionnaire on the report of the Committee on Development, were received, and additional names were distributed.

Adjourned.

**March 31st, 1920.**—The meeting was called to order at 12.15 P. M., at the Section Headquarters at the Statler Hotel; President W. P. Brown in the chair; George H. Tinker, Secretary; and present, also, 31 members and guests.

The reports from the Team Captains relative to votes on the Questionnaire on the report of the Committee on Development were received.

The Secretary read communications from the Duluth Section and others.

Adjourned.

**May 12th, 1920.**—The meeting was called to order at 12.15 P. M., at the Headquarters of the Section, at the Statler Hotel; President W. P. Brown in the chair; George H. Tinker, Secretary; and present, also, 11 members.

The Secretary read communications from H. S. Crocker, Acting Secretary of the Society, relative to the action of the Board of Direction in regard to the change of name from "Association" to "Section" and also in regard to contributions to "America's Gift to France".

On motion, duly seconded, proposed amendments to the Constitution and By-laws changing the name "Association" to "Section" were read and ordered sent out to letter ballot.

On motion, duly seconded, it was decided that the Section contribute \$25 to "America's Gift to France", and the Secretary was instructed to request individual contributions to accompany the Section's gift.

Adjourned.

#### **Connecticut Section, Organized 1919.**

Charles Rufus Harte, President; Clarence M. Blair, Secretary-Treasurer, 785 Edgewood Avenue, New Haven, Conn.

The Annual Meeting of the Section is held in April. The Section also holds fortnightly meetings alternating between Hartford and New Haven, Conn. These meetings are informal luncheon gatherings held usually at noon on Saturday, a notice being mailed to each member calling attention to the date, time, place, and subject for discussion. Members are privileged to invite guests regardless of their affiliation as engineers. No set speeches are scheduled, but certain members are asked to be prepared to present the assigned subject and lead in a general discussion.

#### **Detroit Section, Organized 1916.**

Lewis M. Gram, President; Dalton R. Wells, Secretary-Treasurer, 624 McKerrey Building, Detroit, Mich.

The regular meetings of the Section are held on the second Friday of December, April, and October, the last being the Annual Meeting.

#### **District of Columbia Section, Organized 1916.**

David S. Carll, President; James H. Van Wagenen, Secretary-Treasurer, 719 Fifteenth Street, N. W., Washington, D. C.

#### **Duluth Section, Organized 1917.**

W. A. Clark, President; Walter G. Zimmermann, Secretary, Wolvin Building, Duluth, Minn.

The regular meetings of the Section are held at noon on the third Monday of each month (usually at the Kitchi Gammi Club), with luncheon, followed by a short business session and the reading of papers. Visiting members of the American Society of Civil Engineers can secure from the Secretary definite information relative to the meetings, at which they will be welcomed. The Annual Meeting is held on the third Monday in May.

#### (Abstract of Minutes of Meetings)

**April 19th, 1920.**—The meeting was called to order at the Kitchi Gammi Club; President G. A. Taylor in the chair; Walter G. Zimmermann, Secretary; and present, also, 18 members.

The minutes of the meeting of March 22d, 1920, were read and approved.

Mr. H. C. Ash reported for the Committee on Entertainment for the April meeting of the Civil Engineers' Section of the Duluth Engineers' Club, that he had secured a number of lantern slides of important engineering structures in Duluth and vicinity, which would be shown and described by Mr. J. R. Stack.

The Secretary presented letters from Representatives Cars and Nelson, and J. H. McCann, Clerk of the House of Representatives, and from Senators Nelson, Kellogg, and Lenroot, pertaining to the resolutions adopted by the Section at the March meeting relative to the proposed amendment to the River and Harbor Bill.

Representative Nelson included with his letter a printed copy of his recent speech on the "St. Lawrence Route to the Sea" and asked for a critical analysis of, and constructive suggestions on, the subject by the Section. On motion, duly seconded, the matter was referred to a committee composed of Messrs. Ash, Dresser, and Stack, to be reported on at the May meeting.

On motion, duly seconded, it was decided that the Section would give thorough consideration to the matter of the proposed amendment to the Constitution of the Society providing for student organizations in recognized engineering colleges throughout the country, when the matter came up for action.

A letter from Mr. John I. Quinn, suggesting a trip by members of the Section to the new Cloquet River Bridge, near Independence, Minn., on motion, duly seconded, was referred to the Entertainment Committee with power to make all the arrangements.

Relative to a letter from Engineering Council in regard to patent legislation, on motion, duly seconded, President Taylor was authorized to acknowledge the receipt of the letter and express the approval of the Section in favor of the bill.

A letter from the National Public Works Department Association was referred by President Taylor to a committee consisting of Messrs. Hoyt and Clark with the request that the Committee report at the next meeting of the Section.

A paper by Mr. Lyonel Ayres entitled "Construction of Superior Dry Dock", was presented by the author.

Adjourned.

**May 17th, 1920.**—The Annual Meeting was called to order at the Kitchi Gammi Club; President G. A. Taylor in the chair; Walter G. Zimmermann, Secretary; and present, also, 18 members and 3 guests.

The minutes of the meeting of April 19th, 1920, were read and approved.

The Entertainment Committee reported that the proposed trip to the new County Bridge had been postponed until the roads were in better condition.

Mr. H. C. Ash submitted a written report prepared by the Committee, consisting of Messrs. E. H. Dresser, J. R. Stack, and himself, appointed to consider the speech of the Hon. A. P. Nelson, before the House of Representatives, relative to the proposed deep waterway through the St. Lawrence River to the sea. The project and the speech relative thereto were endorsed by the Committee in its report.

Col. Pope reported a vacancy on the Joint International Commission and suggested that this might be a good opportunity to secure the appointment of an engineer thereto. On motion, duly seconded, it was decided to call this matter to the attention of Engineering Council, with the request that its influence be used toward the appointment of an engineer on the commission, and that the Secretary of the Joint Engineering Board of Minnesota be notified of the action of the Section in the matter.

The Secretary read a letter from Maj. F. A. Pope, Corps of Engineers, U. S. A., relative to the formation of the Society of American Military Engineers.

A letter from Acting Secretary H. S. Crocker of the Society was also read, stating that the Board of Direction of the Society, in a resolution adopted at its meeting of April 19th, 1920, had approved of the use of the term "Section" instead of "Local Association", and requested that all Local Associations take action to revise their Constitutions as promptly as possible in order that uniformity in names may be secured. On motion, duly seconded, it was decided that the name of the Association be changed to "Duluth Section of the American Society of Civil Engineers" and that the Secretary send out letter ballots on the proposed change.

Treasurer John Carson presented his Annual Report for the year ending May 17th, 1920 which, on motion, duly seconded, was accepted and ordered filed in the minutes.

President Taylor appointed Messrs. Hutchinson and Ash as Tellers to canvass the ballot for officers for the year 1920-21, and the following officers were elected: President, W. A. Clark; First Vice-President, J. L. Pickles; Second Vice-President, W. H. Hoyt; Secretary, Walter G. Zimmermann, and Treasurer, John Carson, which officers, with the two latest Past-Presidents, Messrs. Patton and Taylor, will constitute the Board of Directors for the coming year.

Col. Boyden delivered an interesting address on the subject of the "Form of Organization and Nature of Activities of the Portland Cement Association".

President Taylor expressed his thanks to the members for the honor of serving as President of the Section during the past year and also expressed his appreciation of the work done by the various committees.

On motion, duly seconded, a rising vote of appreciation for his services as President was given to Mr. Taylor.

Adjourned.

**June 21st, 1920.**—The meeting was called to order at the Kitchi Gammi Club; President W. A. Clark in the chair; George Bryan, Jr., acting as Secretary; and present, also, 17 members and 2 guests.

President Clark introduced the guests, Messrs. Albert F. Reichmann, President of the Illinois Section, and Kirby L. Strickland, Division Erecting Manager of the American Bridge Company, and Mr. Reichmann addressed the meeting briefly on the increasing desirability of engineers broadening their field in Section work and civic activity.

Mr. W. H. Hoyt submitted the report of the Committee appointed to consider the report of the National Public Works Department Association, and, on motion, duly seconded, the report was placed on file and the Committee discharged.

Relative to a letter from Acting Secretary H. S. Crocker regarding the redistricting of the territory occupied by the membership of the Society, it was decided, on motion, duly seconded, to appoint a Committee of four, with power to act, to consider this letter and the accompanying report.

President Clark announced that the letter ballot in regard to the change of name from "Duluth Association of Members" to "Duluth Section of Members", was unanimously in favor of the change.

President Clark announced the appointment of the following committees for 1920-21: Entertainment, Messrs. O. H. Dickerson, E. H. Dresser, and J. L. Pickles; Publicity, Messrs. W. E. Hawley and S. W. Tarr; Papers and Records, Messrs. H. C. Ash, J. H. Darling, and J. A. Lawrie; Auditing, Messrs. George Bryan, Jr., and L. Clapper; Licensing of Engineers, Messrs. W. H. Hoyt, Lyonel Ayres, H. E. McCool, and F. A. Pope; and Library, Messrs. F. Hutchinson, C. D. B. Christie, and T. F. McGilvray.

Mr. O. H. Dickerson, who had been appointed as delegate from the Duluth Engineers' Club to the Conference on the organization of a Federated American Engineering Societies, held at Washington, D. C., addressed the meeting on the work of the Conference and the proposed organization.

Adjourned.

**July 19th, 1920.**—The meeting was called to order at 12.15 p. m.; President W. A. Clark in the chair; Walter G. Zimmermann, Secretary; and present, also, 16 members.

The minutes of the meeting of June 21st, 1920, were read and approved.

Mr. Frank Hutchinson, Chairman of the Committee on Redistricting the Territory occupied by the membership of the Society, presented the report of that Committee, which he stated had been sent to Acting Secretary Crocker and acknowledged by him. On motion, duly seconded, the report was endorsed and a vote of thanks extended to the Committee. The Committee was also empowered to carry on any further correspondence which might become necessary. The Secretary was also instructed to send copies of the report and of Acting Secretary Crocker's reply to Director Anson Marston and to the Secretaries of the Local Sections in the proposed Seventh District.

The Secretary presented a letter from Acting Secretary Crocker relative to the vote taken by the members on the change of name from Association to Section.

After discussion relative to the change of letter heads, etc., of the Section, it was decided, on motion, duly seconded, that the former Committee on Stationery,

Messrs. Hawley and Lawrie, should be again appointed with power to act in the matter of providing new stationery. The Secretary was also instructed to take up with Acting Secretary Crocker the matter of uniformity in letter heads for the various Sections.

The Secretary presented a letter from Engineering Council on the subject of "Compensation of Engineers", and, on motion, duly seconded, President Clark was instructed to appoint a committee of three to study this subject and report at the next meeting. Messrs. Kelly, Coe, and Woodbury were subsequently appointed as such committee.

The Secretary also presented a letter from the National Public Works Department Association calling attention to the fact that Congress had adjourned without taking any action in the matter of a Federal Public Works Department. On motion, duly seconded, the Secretary was instructed to bring this matter up again at the November meeting of the Section, just prior to the convening of the next Congress.

An informal discussion on the paper entitled "Recent Developments in Concrete", read by Col. Boyden, of the Universal Portland Cement Association, before the Duluth Engineers' Club, was opened by Mr. Dickerson, Chairman of the Entertainment Committee, who was followed by Messrs. Clark, Hawley, Hutchinson, Kelly, Pickles, Stack, and Woodbury.

Adjourned.

#### **Illinois Section, Organized 1916.**

A. F. Reichmann, President; W. D. Gerber, Secretary-Treasurer, 913 Chamber of Commerce, Chicago, Ill.

The regular meetings of the Section are held on the second Monday of March, June, September, and December, the last being the Annual Meeting. The hour and place of meetings are not fixed, but this information will be furnished on application to the Secretary.

#### **Iowa Section, Organized 1920.**

J. E. Van Liew, President; R. W. Crum, Secretary, Iowa State College, Ames, Iowa.

#### **Louisiana Section, Organized 1914.**

A. T. Dusenbury, President; Eugene F. Deléry, Secretary, 602 Sewerage and Water Board Building, New Orleans, La.

The regular meetings of the Section are held at The Cabildo, New Orleans, La., on the first Monday of January, April, July, and October.

#### **Nebraska Section, Organized 1917.**

Clark E. Mickey, President; Homer V. Knouse, Secretary-Treasurer, 200 City Hall, Omaha, Nebr.

Regular meetings of the Section are held on the first Saturday of each month, except July and August, and at such places as may be appointed from time to time by the Executive Committee. The Annual Meeting is held in Lincoln, Nebr., on the second Friday in January.

Visiting members of the Society are especially urged to communicate with the Secretary when in the city.

#### **(Abstract of Minutes of Meeting)**

**June 5th, 1920.**—The meeting was called to order at the Hotel Castle, at 8 P.M.; President Clark E. Mickey in the chair; Homer V. Knouse, Secretary; and present, also, 11 members and 4 guests.

A paper by Mr. Arthur C. Everham, entitled "The Use of Concrete Piles in Foundation Work", was presented by the author, and the subject was discussed later by a number of those present.

The Secretary presented a communication from H. S. Crocker, Acting Secretary of the Society, in regard to changing the name "Association" to "Section", and, on motion, duly seconded, the Secretary was instructed to prepare a letter ballot providing for such change, as stipulated by the Constitution.

A letter from H. S. Crocker, Acting Secretary of the Society, relative to the "Marne Memorial Movement", was read, and on motion, duly seconded, the Memorial was endorsed by the Section and all members were asked to contribute toward the fund, such contributions to be forwarded directly to Acting Secretary Crocker.

A letter from R. W. Crum, Secretary of the Iowa Section, was read, relative to the visit of President Davis at Iowa State College on June 8th, 1920, and, on motion duly seconded the Secretary was instructed to thank the Iowa Section for its invitation to the members of the Section to meet with it on that date. Messrs. Campen and Edgecomb were appointed, on motion, duly seconded, as representatives of the Section at the meeting.

On motion, duly seconded, the candidacy of Mr. Frank T. Darrow for Director of the Society from District No. 10, was endorsed unanimously.

A number of questions were submitted by R. E. Edgecomb, Chief Engineer of the Building Department of Omaha and Secretary of the City Building Review Board, in regard to the proposed changes in the Building Code. The subject was generally discussed by those present, but no final endorsement was given by the Section.

Adjourned.

#### New York Section, Organized 1920.

William J. Wilgus, President; W. T. Chevalier, Secretary, 17 Battery Place, New York City.

The Annual Meeting is held in May. The times and places of other meetings are not fixed, but this information will be furnished on application to the Secretary.

#### (Abstract of Minutes of Meeting)

**May 12th, 1920.**—The meeting was called to order at the Engineering Societies Building, at 8.40 P. M.; President Robert Ridgway in the chair; Lewis D. Rights, Secretary; and present, also, 51 members and 12 guests.

The Secretary announced the membership of the Section as 248.

A letter from Mr. John A. Bensel reported progress for the Committee on Licensing of Engineers in New York State, enclosing a copy of the bill as presented to Governor Smith. Mr. Clifford M. Holland, a member of the Committee, announced that the Licensing Bill was before Governor Smith and that the Committee had collaborated with the Secretary of the American Association of Engineers in an explanatory memorandum to the Attorney-General concerning certain features of the bill.

President Ridgway extended to the membership an invitation from Col. F. A. Snyder, of the 22d Engineers, N. Y. N. G., to attend a review of that regiment on May 19th, 1920, in honor of Col. William C. Langfitt, Corps of Engineers, U. S. A.

For the Special Committee on Numbers and Dates of Future Meetings, Mr. William J. Wilgus reported that the Committee recommended that meetings be held on the second Wednesday of each month from October to May, inclusive, the last meeting to be the Annual Meeting. The Committee also recommended that the meetings be held at an early hour, say 5.30 P. M., affording those who so desired an opportunity to join at supper. The suggestion was also made that consideration be had regarding the wisdom of holding some of the meetings jointly with Local Sections of the other Founder Societies.

Mr. Otis E. Hovey reported for the Committee on Holding Joint Meetings with Local Sections of Other Societies, that the Committee recommended that

such meetings should not exceed three in number to be held from May, 1920, to May, 1921.

On motion, duly seconded, these reports were referred to the Board of Direction of the Section, with power.

Mr. R. S. Buck reported by letter for the Special Committee appointed to consider possible means of co-operation in the development of the 22d Engineers, N. Y. N. G. After describing the progress made, Mr. Buck recommended that Col. Snyder be given an opportunity to present the matter to the Section. The Committee also recommended the transmittal of the substance of its report to the Secretaries of the Local Sections of the other Founder Societies, with the suggestion that their co-operation and assistance would be welcomed.

After the presentation of the report of the Nominating Committee and the casting of the ballot, President Ridgway declared the election of the following officers: President, William J. Wilgus; First Vice-President, R. S. Parsons; Second Vice-President, J. P. H. Perry; Secretary, W. T. Chevalier; Treasurer, F. C. Noble; Directors, O. E. Hovey and R. H. Chambers.

On the recommendation of the Nominating Committee, on motion, duly seconded, it was decided that Mr. Robert Ridgway should be the first Past-President of the Section.

A letter from Acting Secretary Crocker of the Society was read relative to the approval of the Board of Direction of the Society of the name, "Section" in place of "Association", of local branches of the Society.

The Secretary read a letter from Acting Secretary Crocker relative to subscriptions to the Marne Memorial, and on motion, duly seconded, the Treasurer was appointed a committee to secure such subscriptions from members of the Section.

On motion, duly seconded, a suggestion that the terms of the Secretary and Treasurer and of the two Vice-Presidents of the Section be adjusted to alternate, was referred to the Board of Direction of the Section with power.

Mr. William J. Wilgus presented the paper of the evening, entitled, "The Railroad Question in Relation to the Metropolitan District", and the subject was discussed by Messrs. Charles W. Leavitt, H. C. Keith, O. H. Landreth, F. A. Molitor, T. Kennard Thomson, H. B. Seaman, and W. T. Chevalier.

Mr. Ridgway addressed the meeting briefly on the work begun by the Section and presented President-elect Wilgus.

Adjourned.

#### **Northwestern Section, Organized 1914.**

Ralph D. Thomas, President; W. N. Jones, Secretary, City Engineer's Office, City Hall, Minneapolis Minn.

The meetings of the Section are held bi-monthly, alternating between St. Paul and Minneapolis, on the third Friday of each month. Information as to the time and place of such meetings will be furnished on application to the Secretary.

#### **Philadelphia Section, Organized 1913.**

S. M. Swaab, President; Henry T. Shelley, Secretary, 416 City Hall, Philadelphia, Pa.

The regular meetings of the Section are held at the Engineers' Club of Philadelphia, 1317 Spruce Street on the first Monday in January, April, and October, the last being the Annual Meeting. Special meetings are also held, in order to provide an opportunity for members to take a more active part in the work of the Section.

#### **Pittsburgh Section, Organized 1917.**

Morris Knowles, President; Nathen Schein, Secretary-Treasurer, 426 City County Building, Pittsburgh, Pa.

The Annual Meeting of the Section is held on the first Monday in October. The time and place of other meetings are not fixed, but this information will be furnished on application to the Secretary.

**Portland (Ore.) Section, Organized 1913.**

J. C. Stevens, President; C. P. Keyser, Secretary, 318 City Hall, Portland, Ore.

The Annual Meeting of the Section is held on the second Friday in January. Other meetings are called by the President and are usually convened on Friday evenings. The place is not fixed, but this information may be obtained on application to the Secretary. All members of the American Society of Civil Engineers are cordially invited to attend the meetings.

(Abstract of Minutes of the Meeting)

**May 14th, 1920.**—The meeting was called to order at the University Club, at 8 p. m.; President Stevens in the chair; C. P. Keyser, Secretary; and present, also, 23 members.

The minutes of the meeting of April 16th, 1920, were read and approved. The minutes of the Board of Direction of April 26th, and May 1st, 1920, were also read and ordered filed.

President Stevens addressed the meeting briefly on how Portland secured the Fiftieth Annual Convention of the Society, stating that it was due principally to the work of Director D. C. Henny, and called on Mr. G. C. Mason, Chairman of the Committee of Arrangements, for a progress report.

Mr. Mason reported that he had called an organization meeting of the members of the Local Committee of Arrangements and had named the following heads of Sub-Committees; Entertainment, Hoffmark; Finance, Hauser; Accommodations, Curry; Printing, Stanley; and Highway Trips, Dater.

The Secretary read a communication from Acting Secretary H. S. Crocker relative to the action of the Board of Direction in abolishing the name "Association" in favor of "Section", and suggested that the Constitution of the Association be amended accordingly.

On motion, duly seconded, it was decided that Article I, Section 1, of the Constitution be amended to read "The name of this Association shall be Portland Section of the American Society of Civil Engineers".

The Secretary read a communication from Acting Secretary Crocker relative to contributions to the Marne Memorial, and, on motion, duly seconded, it was decided to forward \$25 as the contribution of the Section.

President Stevens stated that he was shortly to attend a meeting of the Nominating Committee and asked for suggestions for officers of the Society for 1921. On motion, duly seconded, it was decided that the Section favor Mr. Robert A. Cummings, of Pittsburgh, Pa., for President.

Mr. F. M. Randlett, Chief Engineer of the Municipal Water-Works, introduced his predecessor, Mr. D. D. Clarke, and those present were entertained by a lecture on the "History and Development of the Bull Run Water System for Portland", illustrated by lantern slides.

Adjourned.

**St. Louis Section, Organized 1888 (Constitution Approved by Board, 1914).**

Edward E. Wall, President; C. W. S. Sammelman, Secretary-Treasurer, 300 City Hall, St. Louis, Mo.

The Annual Meeting of the Section for the election of officers and for the transaction of business, is held on the fourth Monday in November. Two meetings each year, for the presentation and discussion of technical papers, are held in the Auditorium of the Engineers' Club of St. Louis and are open to members of the Associated Societies. Other "get-together" meetings are held regularly for dinner or luncheon on the fourth Monday of each month except July, August, and November.

**San Diego Section, Organized 1915.**

W. C. Earle, President; R. C. Wueste, Secretary-Treasurer, Bonita, Cal.

**Seattle Section, Organized 1913.**

John L. Hall, President; Bertram D. Dean, Secretary, 1711 Ravenna Boulevard, Seattle, Wash.

The regular meetings of the Section with luncheon, are held at the Engineers' Club, Arctic Building, Third Avenue and Cherry Street, at 12.15 P. M., on the last Monday of each month. Informal luncheons are also held at 12.15 P. M., every Monday at the Engineers' Club.

Special evening meetings are held from time to time for the purpose of discussing important topics, and information concerning these meetings may be had by addressing the Secretary. All members in any grade of the American Society of Civil Engineers are cordially invited to attend the meetings when in the vicinity, and, if located in this District for any length of time, their membership in the Section will be appreciated.

## (Abstract of Minutes of Meeting)

**April 26th, 1920.**—The meeting was called to order at the Masonic Club at 12.45 P. M.; President John L. Hall in the chair; Bertram D. Dean, Secretary; and present, also, 19 members and guests.

The minutes of the previous meeting were read and approved.

In order that each member present might become better acquainted with his fellow-members and guests, President Hall introduced the gentleman on his left and asked that each in turn do likewise.

On motion, duly seconded, the Secretary was directed to pay the current bills.

On motion, duly seconded, the present arrangement of regular monthly meetings following lunch at the Masonic Club was ordered to be continued as long as seemed advisable to the Board of Directors.

On motion, duly seconded, President Hall was given authority to appoint a "committee on committees" whose duty should be the appointment of additional committees of the Section to further its activities and interest its members, and to outline the activities of such committees.

President Hall appointed Messrs. A. S. Downey, L. Murray Grant, and Ernest B. Hussey as such Committee on Committees. Mr. Hussey asked to be excused from serving on account of extended absences from the city and the membership of the Committee was reduced to Messrs. Downey and Grant.

Mr. A. H. Dimock, as Chairman of the Committee on the Jones-Reavis Bill for a National Department of Public Works, requested interviews from members covering duplication of engineering work in Government Bureaus which had come to their attention, such interviews to be forwarded to the Headquarters. The subject was discussed by Messrs. T. A. Noble, T. E. Phipps, L. Murray Grant, and James E. Blackwell.

Mr. T. A. Noble stated that the engineers of Everett, Wash., were taking an active part in public affairs and asked co-operation from the Seattle Association. President Hall replied that the Joint Council had that matter in charge.

Adjourned.

**Southern California Section, Organized 1914.**

W. K. Barnard, President; Floyd G. Dessery, Secretary, 619 Central Building, Los Angeles, Cal.

The Southern California Section of Members of the American Society of Civil Engineers (Los Angeles, Cal.) holds regular monthly meetings on the second Wednesday of each month, the December meeting being the Annual Meeting.

Informal luncheons in connection with the Joint Technical Societies of Los Angeles are held at 12.15 P. M., every Thursday at the Broadway Department Store Café.

The by-laws of the Section provide for the extension of hospitality to any member of the Society who may be temporarily in Los Angeles, and any such member will be gladly welcomed as a guest at any of the meetings or luncheons.

(Abstract of Minutes of Meetings)

**April 28th, 1920.**—The special meeting was called to order at the Jonathan Club; President W. K. Barnard in the chair; F. G. Dessery, Secretary; and present, also, 37 members and 14 guests.

The minutes of the previous meeting were approved as written.

On motion, duly seconded, a circular letter (April 20th, 1920) from the Chairman of the Citizens' School Service Committee, asking endorsement by this Section of the efforts to increase the compensation of school teachers in Los Angeles City and County, was referred to Professor Franklin Thomas as a committee of one, to report at the next meeting.

Mr. E. T. Flaherty called the attention of the Section to the desirability of having eliminated from the City Building Ordinance a clause requiring that plans for reinforced concrete buildings have the approval and signature of a Licensed Architect. On motion, duly seconded, the matter was referred to a committee to be appointed by the President, to report at the next meeting. President Barnard subsequently appointed Messrs. E. T. Flaherty, Chairman, J. A. Griffin, Milo C. Halsey, Blaine Noice, and Robert P. Miller as such committee.

Director Hawgood, reading from the "Proceedings of the 52d Annual Convention of the American Institute of Architects", held April, 1919, at Nashville, Tenn., called attention to the definite action taken by that meeting by which the Institute is bound to observe the decision of the National Board of Jurisdictional Awards in the writing of specifications under penalty of suspension from the Institute. Mr. Edwin A. Bergstrom, President of the Los Angeles Chapter of the Institute, read a resolution unanimously adopted at a special meeting on April 23d, 1920, severely condemning the action against alliance with labor unions.

On motion, duly seconded, it was decided unanimously to be the sense of this meeting that those assembled heartily approved of and are in full accord with the action taken by the American Institute of Architects in condemning the action at the Nashville Convention.

On motion, duly seconded, after discussion by Messrs. Jubb and Trask, President Barnard was requested to appoint a committee of three to consider the matter in all its phases, to act for the Section, and to notify the Board of Direction of the Society and Engineering Council of such action as was taken by this Section. President Barnard subsequently appointed Messrs. Hawgood, Anderson, and Dennis on this Committee.

President Barnard outlined the proposed method of conducting discussion on the "Railroad Terminal Situation in Los Angeles".

President Barnard having participated in the original hearing before the Railroad Commission, asked Mr. Trask to preside at the meeting during the discussion.

Mr. George G. Anderson, Chairman of the Committee on Review of the Railroad Commission's Report on "Railroad Grade Crossings and Terminals in Los Angeles", presented a written report of his Committee, and, on motion, duly seconded, the Committee consisting of Messrs. Anderson, Dennis, and Reed, was extended the thanks of the Section for its efforts.

On motion, duly seconded, the report was accepted by the meeting and opened for discussion, in which the following members participated, Messrs. Sawyer, Hawgood, Trask, Storrow, Reed, W. K. Barnard, Woodard, A. F. Barnard, Fulton, Lane, William Thomas, Morris, Strong, R. P. Miller and C. K. Bowen.

It was ordered, on motion, duly seconded, that the report of the Committee on Review be printed and sent to the membership.

Mr. Samuel Storrow addressed the meeting on the work of his Committee on the Los Angeles Terminal Situation and promised to furnish the Section with copies of "Specification of Situation".

On motion, duly seconded, the Board of Directors was requested to ask Mayor Snyder to furnish members of the Section with the necessary copies of the Railroad Commission's Report to the end that the Section could comply fully and intelligently with the request for constructive recommendations contained in his letter of February 11th, 1920.

On motion, duly seconded, the Board of Directors was requested to ask the Railroad Commission to print and furnish additional copies of the Report for the members of the Section for the same reasons contained in the previous motion.

It was decided, on motion, duly seconded, that this meeting be adjourned to May 12th, 1920.

On motion, duly seconded, it was also decided to leave the method of conducting the meeting of May 12th, 1920, entirely with the Programme Committee.

Adjourned.

**May 12th, 1920.**—The Special Meeting was called to order at 7.45 p. m., at the Jonathan Club; President W. K. Barnard in the chair; F. G. Dessery, Secretary; and present, also, 30 members and 14 guests.

On motion, duly seconded, the minutes of the meeting of April 28th, 1920, were approved as written.

The Secretary presented a report from Professor Franklin Thomas requesting the approval of the Section of the efforts of the Citizens School Service Committee to secure increased and proper compensation for the public school teachers of Southern California. On motion, duly seconded, the President and Secretary were directed to comply with the request and to forward a resolution to the Citizens School Service Committee endorsing its action.

On motion, duly seconded, the communication from Acting Secretary H. S. Crocker relative to the proposed change in the name of "Association" to "Section" was referred to the Board of Directors and the Committee on Constitution and By-laws.

On motion, duly seconded, the communication from Acting Secretary Crocker asking for contributions from the membership to the National Organization of "America's Gift to France", was referred to the Board of Directors with power to act.

Mr. E. T. Flaherty, Chairman of the Committee on Building Ordinance, presented the report of the Committee on suggested amendments to the City Building Ordinance, and on motion, duly seconded, the report was adopted and ordered filed.

Mr. George G. Anderson, Chairman of the Programme Committee, briefly outlined and analyzed the result of the vote on the Questionnaire sent out by the Development Committee. He also discussed the proposed procedure and limitations relative to the presentation of the topic of the evening "Railroad Terminal Situation in Los Angeles".

Mr. H. B. Titcomb, Vice-President of the Pacific Electric Railway, outlined, briefly, the "Arcade Depot and Southern Pacific Railroad Project", and the subject was discussed by Messrs. R. P. Miller, S. A. Jubb, and J. A. Griffin.

Mr. Harry Hawgood explained the "Engineering Features of the Santa Fe Site Project" and answered questions by Messrs. M. C. Hendrie, E. R. Bowen, J. M. Baumgartner, A. L. Sonderegger, R. P. Miller, George G. Anderson, J. A. Griffin, and M. C. Halsey.

President Barnard discussed in general "The Plaza Site Project", and answered questions by Messrs. S. A. Jubb, H. B. Titcomb, F. D. Howell, E. R. Bowen, A. L. Sonderegger, F. Gillelen, J. R. Prince, J. A. Griffin, and F. G. Dessery.

Informal discussion on the three projects as presented was opened by Mr. F. D. Howell, who was followed by Messrs. William Post, H. B. Titcomb, S. A. Jubb, and George G. Anderson.

A vote of thanks was tendered Messrs. H. B. Titcomb and F. D. Howell for their presentation of their subjects.

Adjourned.

**May 19th, 1920.**—The Special Meeting was called to order at 7.30 P. M., at the Jonathan Club; President W. K. Barnard in the chair; F. G. Dessery, Secretary; and present, also, 29 members and 11 guests.

President Barnard announced the death of Mr. Homer Hamlin, and, on motion, duly seconded, appointed a committee consisting of Messrs. William Mulholland, J. H. Quinton, and E. T. Wheeler, to draft suitable resolutions of condolence. The Committee presented the following resolutions:

"Whereas, it has pleased the Almighty to remove from our midst, our fellow-member, Homer Hamlin, this Society desires to express its sympathy to his bereaved widow and children and to heartily condole with them in their poignant grief.

"His death will prove a distinct loss to this Town, the State and the Nation, to whose service he has been throughout his whole professional life assiduously devoted.

"We desire to express our deep appreciation of his upright and manly character as an Engineer and a Citizen. As an Engineer he was thorough, careful and reliable, honorable and conscientious, and not to be swerved from the straight path of rectitude by either fear or favor. As a Citizen he was a model husband, father and neighbor, and in his pure and moral life set a noble example for the young of all classes, and particularly for the members of his chosen profession.

"Resolved, that these resolutions be spread upon the minutes of this Society, and a copy be sent to Mrs. Hamlin and family with our deepest sympathy and condolence in their affliction.

"His life was gentle, and the elements so mixed in him that Nature might stand up and say to all the world, "This was a Man"."

The presentation of the subject "Railroad Terminal Situation of Los Angeles", was opened for discussion by President Barnard, who was followed by Messrs. Hawgood, Miller, Weeks, Bates, Howell, Lane, Jubb, Barnard, Post, and Noerenberg.

Mr. George G. Anderson defended briefly the report of the Local Committee and explained the limitations placed on that Committee in the review of the report of the Railroad Commission.

• Mr. Frank Gillelen moved that the report of the Committee on the subject be adopted and that the Section suggest to the Mayor and City Council of Los Angeles that the entire Railroad Terminal Problem be referred back to the Railroad Commission for consideration.

After considerable discussion of the motion by Messrs. Gillelen, Howell, Smith, Barnard, Bates, Weeks, Hawgood, Anderson, Dessery, Miller, Jubb, Sawyer, and Lane, it was moved that the meeting adjourn, which motion was lost.

The original motion by Mr. Gillelen, amended by Mr. Howell to the effect "That the report of this Committee be accepted and that the Committee be requested (now having heard all sides of the question) to present a report covering all phases of the matter, together with its recommendations for the proper action of this Section" in the matter, and, further amended, that Messrs. Howell and Hawgood should be included as members of the Committee, was carried.

The Committee which is to make the report consists of Messrs. George G. Anderson, Chairman, H. W. Dennis, Ralph J. Reed, F. D. Howell, and H. Hawgood.

Adjourned.

**June 9th, 1920.**—The meeting was called to order at 7.40 P. M., at the Jonathan Club; Vice-President H. W. Dennis in the chair; F. G. Dessery, Secretary; and present, also, 18 members and 6 guests.

The Chairman called the attention of the members to the Fiftieth Annual Convention of the Society to be held in Portland, Ore., August 10th-12th, 1920, and urged as many as possible to attend.

On motion, duly seconded, the Acting Treasurer was authorized to pay the assessment due from the Section for the expenses of the current year of the Joint Technical Society.

The Secretary read a letter transmitting the proposed Constitution of the California Engineering Council and, on motion, duly seconded, a committee consisting of Messrs. H. Hawgood, K. D. Schwendener, and J. A. Griffin, was appointed by the Chairman, with power to act for the Section in the matter.

Relative to the intention of the Technical Societies of the State to formulate a "Licensing Act" to be presented to the next session of the Legislature, the Chairman was authorized, on motion, duly seconded, to appoint a committee of one, with an alternate, to act with like committees from the various member societies of the Joint Technical Societies of Los Angeles, which enlarged committee is to work in conjunction with a like committee of the Joint Council of Engineering Societies of San Francisco. Mr. F. E. Trask was subsequently appointed a committee of one with Mr. R. J. Reed as alternate.

Owing to the failure of the speaker of the evening to appear, Vice-President Dennis called on the following:

Mr. Arthur S. Bent who recounted his experiences at the Contractors' Convention, recently held in the East, and the tendency of the times in contracting work and the attitude of contractors toward the public and engineers.

Mr. R. M. Beanfield who discussed "Labor Turnover".

Maj. F. B. Downing, U. S. A., who explained the aims and objects of the proposed society, "American Military Engineers", and presented an invitation to the membership of the Section to participate in the first meeting of the organization on June 15th, 1920.

Mr. William Post who discussed "General Engineering Matters", particularly in regard to the work of the State Engineer's Office and the necessity of keeping the maps of the State up to date.

Mr. J. E. Rockhold who spoke in detail on "County Work and Efforts Along the Lines of Map-Making".

Mr. Walter E. Jessup who described "The Magnitude of the Construction Work at the Goodyear Rubber Company's Plant in Los Angeles".

Mr. H. W. Dennis who outlined briefly "The Magnitude of the Construction Work of the Southern California Edison Company in Central California", etc.

Mr. K. D. Schwendener who briefly recounted some of his experiences in France during the World War.

Mr. F. E. Trask who spoke on the "Engineering Developments on the Pacific Coast and the Necessity of Constructive Legislation in Behalf of Such Developments".

Adjourned.

**July 14th, 1920.**—The meeting was called to order at the Jonathan Club, at 7.30 P. M.; President W. K. Barnard in the chair; E. T. Flaherty, Acting as Secretary; and present, also, 27 members and 8 guests.

The minutes of the meeting of June 9th, 1920, were read and approved.

The Secretary read letters from Mr. E. J. Schneider and Mrs. Carrie D. Hamlin, which were ordered filed.

A report of the San Francisco Chapter of the American Association of Engineers, on California State Civil Service, was also read in part and ordered filed.

The report of the Committee on California Engineering Council, consisting of Messrs. H. Hawgood, Chairman, K. D. Schwendener, and J. A. Griffin, was presented. For the benefit of the members, Mr. Hawgood read excerpts from the Constitution relative to purposes of establishing California Engineering Council, etc.

On motion, duly seconded, the Section approved the Constitution of California Engineering Council tentatively, and the Committee was instructed to submit any modification thereof to the Section at a later date.

On motion, duly seconded, certain recommendations as to the wording of the Constitution were suggested by the Section.

A report of the Committee appointed to revise the ordinance relative to the required signature on plans of a licensed Architect, which revised ordinance provided for the signature of a licensed Architect or recognized qualified Engineer, was presented, and, on motion, duly seconded, was adopted by the Section.

On motion, duly seconded, the Committee was made a Standing Committee to consider present building ordinances and to recommend such changes as seem to be advisable.

The report of the Committee on Jurisdictional Awards was presented by Chairman Hawgood, and, after considerable discussion, it was decided, on motion, duly seconded, to adopt the report and to send copies of it to the Board of Direction of the Society and to the other Local Sections.

On motion, duly seconded, Mr. Hawgood was instructed to report to the Board of Direction of the Society, should occasion require such action, that if the Board does not take prompt action along the lines suggested in the report of the Committee on Jurisdictional Awards and its exhibits, the Section will take such action as it deems appropriate.

The report of the Committee on Terminal Investigation was presented by Mr. George G. Anderson, and, on motion, duly seconded, was adopted.

On motion, duly seconded, the Board of Directors of the Section, was instructed to prepare the letter transmitting the report of the Committee on Terminal Investigations to Mayor Snyder.

Mr. Anderson announced, for the Programme Committee, that President Davis of the Society would be in Los Angeles about August 1st, 1920, and asked for opinions as to change of date of the next meeting of the Section.

On motion, duly seconded, it was decided that when the meeting was adjourned, it would be adjourned to meet at the call of the Chair.

Adjourned.

#### **Spokane Section, Organized 1914.**

Alfred D. Butler, President; Charles E. Davis, Secretary-Treasurer, 401 City Hall, Spokane, Wash.

The regular meetings of the Section are held on the second Friday of each month, except July and August. The hour and place of meeting are not fixed, but this information will be furnished on application to the Secretary.

Visiting members are invited to attend the meetings.

#### **Texas Section, Organized 1913.**

Hans Helland, President; E. N. Noyes, Secretary, Deere Building, Dallas, Tex.

#### **Utah Section, Organized 1916.**

A. B. Villadsen, President, 304 Dooly Bldg., Salt Lake City, Utah.

The Annual Meeting of the Section is held on the first Wednesday in April. The time of other meetings is not fixed, but this information will be furnished on application to the President.

**PRIVILEGES OF ENGINEERING SOCIETIES  
EXTENDED TO MEMBERS OF THE  
AMERICAN SOCIETY OF CIVIL ENGINEERS**

Members of the American Society of Civil Engineers will be welcome in the Reading Rooms and at the meetings of many engineering societies in all parts of the world. A list of such societies will be found on pages 42 and 43 of the Year Book of the Society for 1920.

The Engineering Societies of Wisconsin, Madison, Wis., and Vereeniging van Waterstaatsingenieurs in Nederlansk Oost-Indie, are to be added to the above mentioned list, and members of these Societies are accorded the usual courtesies and privileges of the Headquarters of the Society.

## MEMBERSHIP

(From May 3d to August 5th, 1920)

ADDITIONS		Date of Membership.
MEMBERS		
ABADIE, EUGENE HILARIAN.	Lt.-Col., Q. M. C., U. S. A., Suite 416, Munsey Bldg., Washington, D. C.....	June 1, 1920
AGG, TANSEY RADFORD.	Prof. Highway Eng., Iowa State Coll. (Res., 707 Hodge Ave.), Ames, Iowa.....	June 1, 1920
BASCOM, GEORGE ROCKWELL	Dist. Mgr., Barber-Greene Co., 11 South La Salle St., Chicago, Ill.....	Sept. 11, 1917 } Assoc. M. M.
BELL, RODNEY LINTON.	Dist. Engr., Div. of Highways, Dept. of Public Works and Bldgs., State of Illinois, Paris, Ill.....	June 2, 1920
BLACK, WALTER GLEN.	Cons. Engr. (Black & Griffin), Mandan, N. Dak.....	July 6, 1920 } Assoc. M. M.
BOWEN, EDWARD ROSE.	Cons. Engr., 1120 Central Bldg., Los Angeles, Cal.....	Nov. 28, 1916 } Assoc. M. M.
BOYD, GEORGE RAY.	Senior Drainage Engr., U. S. Bureau of Public Roads, Ashland, Va.....	June 2, 1920 } Assoc. M. M.
BRADSHAW, SAM WIGFALL.	Asst. Engr., Bethlehem Steel Bridge Corporation (Res., 511 Ave. D), Bethlehem, Pa.....	Oct. 2, 1900 } Assoc. M. M.
BROWN, GROVER CHARLES.	Asst. Chf. Civ. Engr., Cambria Steel Co. (Res., 61 Venango St.), Johnstown, Pa..	July 6, 1920 } Assoc. M. M.
BROWN, JOHN HENRY, JR.	Secy., Manwaring & Cummins, Inc., 5600 Germantown Ave., Philadelphia, Pa....	May 2, 1911 } Assoc. M. M.
BUNKER, STEPHEN SANS.	Asst. Engr., Maine Highway Comm. (Res., 18 South Chestnut St.), Augusta, Me.	July 6, 1920 } Assoc. M. M.
BUSHNELL, HOWARD BLAINE.	Cons. and Sales Engr., Western Wheeled Scraper Co., Aurora, Ill.....	June 2, 1920 } Assoc. M. M.
CAMPBELL, GEORGE RAYMOND.	U. S. Cadastral Engr., 413 East 9th St., Olympia, Wash.....	Aug. 31, 1915 } Assoc. M. M.
CASE, CHARLES ANDREW.	Junior Highway Engr., Dept. of Public Works, State of Illinois, Box 7, Greenup, Ill.	April 21, 1920 } Assoc. M. M.
CHAMBLIN, ELGA ROSS.	Archt. and Cons. Structural Engr., 515 Southwestern Life Bldg., Dallas, Tex.....	April 21, 1920 } Assoc. M. M.
CHURCHILL, PERCIVAL MITCHELL.	Asst. Engr., U. S. Engr. Dept., U. S. Engr. Office, Dallas, Tex. (Res., Elmwood, Mass.).....	Dec. 6, 1915 } Assoc. M. M.
CLAWITER, EDWARD IVAN.	Chf. Engr. and Secy., San Francisco Bridge Co., 1005 Nevada Bank Bldg., San Francisco, Cal.....	June 30, 1911 } Assoc. M. M.
CLINTON, SAMUEL DEXTER.	173 Twenty-third Ave., Seattle, Wash.....	June 2, 1920 } Assoc. M. M.
COE, DENZIL WORRELL.	Pearl River, N. Y.....	Oct. 5, 1909 } M. June 2, 1920
COLGAN, CHARLES JUDSON.	Research Dept., West. Penn. Power Co., Box 1223, Pittsburgh, Pa.....	Nov. 25, 1919 } Assoc. M. M.
COWIE, FREDERICK WILLIAM.	Chf. Engr., Harbor Commrs. of Montreal, Harbor Commr.'s Office, Montreal, Que., Canada.....	Nov. 12, 1913 } June 1, 1920
COWIN, JAMES.	Pres., Cowin & Co., 321 Security Bldg., Minneapolis, Minn.....	Mar. 14, 1916 } Assoc. M. M.
		June 2, 1920

MEMBERS (*Continued*)

		Date of Membership.
CROWELL, FRANCIS STIRLING.	Care, The Foundation Co., Whitinsville, Mass.....	Jun. Feb. 6, 1906
DAVIDSON, WILLIAM CLARENCE.	Dist. Engr., New Mexico State Highway Comm., Roswell, N. Mex.....	Assoc. M. Oct. 1, 1912
DAWSON, WILLIAM EDWARD.	Civ. and Min. Engr., Care, Peerless Coal Co., Springfield, Ill.....	M. April 21, 1920
DIBBLE, BARRY.	Mgr., Minadoka Project, U. S. Reclama- tion Service, Burley, Idaho.....	Assoc. M. Dec. 6, 1915
DINGMAN, CHARLES FRANCIS.	In Chg., Eng. Dept., Flyat Bldg. & Constr. Co., 15 Grove St., Palmer, Mass....	M. June 2, 1920
DIX, THURMAN WILLARD.	Asst. Prof., Civ. Eng., Univ. of Vermont; City Engr., 10 Lafayette Pl., Burlington, Vt.....	Assoc. M. Sept. 12, 1916
EATON, ARTHUR CHESTER.	Hydr. Engr., Power Constr. Co., 36 Monroe Ave., Worcester, Mass.....	M. April 21, 1920
EDWARDS, DEAN GRAY.	Chf. Engr., Inter-Continental Constr. Corporation, 215 Rogers Ave., Brooklyn (Res., 240 Alsop St., Jamaica), N. Y.....	Jun. Assoc. M. Dec. 3, 1912
EDWARDS, LEROY SUMMERFIELD.	Asst. Civ. Engr., Newport News Ship- building & Dry Dock Co., 312 Sixty-third St., Newport News, Va.	M. June 2, 1920
ELLIOTT, JOSEPH ALFRED.	Engr., Supt., and Mgr., Wyoming Development Co., Wheatland, Wyo.....	Assoc. M. July 6, 1920
EMMERT, ROY WEST.	Secy., Treas., and Chf. Engr., Underground Constr. Co., 106 North La Salle St., Chicago, Ill.....	Assoc. M. July 6, 1915
FOLLANSBEE, ROBERT.	Dist. Engr., U. S. Geological Survey, 403 New Post Office Bldg., Denver, Colo.....	Jun. July 6, 1920
FORD, EUGENE BRUCE.	Assoc. M. Oct. 7, 1908	
GASCOIGNE, GEORGE BRADLEY.	Asst. Engr., G. N. Ry., Room 712, First National Bank Bldg., Great Falls, Mont.....	July 6, 1920
GELDER, ROYAL WILLIAM.	Asst. Engr., City Hall, Greeley, Colo.....	Assoc. M. June 1, 1920
GILCREAST, FRANK WEBSTER.	Asst. Engr., M. of W., Lehigh & New England R. R., 1416 Pennsylvania Ave., Bethlehem, Pa.....	Assoc. M. July 6, 1920
GRAY, ROY CECIL.	Vice-Pres. and Chf. Engr., Concrete & Steel Constr. Co., 212 Independent Bldg., Joplin, Mo.	Jun. Oct. 3, 1911
HAMMOND, LESTER CLARK.	Vice-Pres., Elliot C. Brown Co., New York City.....	Assoc. M. Mar. 4, 1914
HANNA, WILBUR SHERPEY.	Superv. Engr., U. S. Indian Irrig. Service, Billings, Mont.....	M. July 6, 1920
HANSEN, CARL VALDEMAR.	Chf. Engr., St. John Levee and Drainage Dist. of Missouri, and Highway Engr., County of New Madrid, New Madrid, Mo.....	Assoc. M. Oct. 31, 1911
HESLOP, DERWENT GORDON.	Care, William Fletcher, The Lawns, Eaton, Norwich, England.....	M. June 2, 1920
HOLMES, HOWARD WHITTIER.	514 Eighth Ave., Helena, Mont.....	Assoc. M. May 28, 1912
HOWES, BENJAMIN ALFRED.	Cons. Engr., 70 Fifth Ave., New York City.....	M. Jan. 20, 1920
		Assoc. M. April 17, 1916
		M. April 21, 1920

MEMBERS (*Continued*)

		Date of Membership.
HUBER, WILLIAM THOMAS.	Vice-Pres., Gen. Mgr., and Engr., Green & Lanctot Housewrecking Co. (Res., 290 Summit Ave.), Buffalo, N. Y.....	{ Assoc. M. April 30, 1912 M. April 21, 1920
KASTENHUBER, EDWIN GUSTAV, JR.	Civ. Engr. and Surv. (Kastenhuber & Anderson), Easton, Md.....	{ Assoc. M. July 1, 1909 M. June 2, 1920
KAY, MURRAY.	Civ. Engr., Constr. Div., U. S. A., War Dept., Wash- ington, D. C.....	July 6, 1920
KEERL, HARRY DOUGLAS.	Hydr. and Municipal Engr. (Keerl & Conklin), 625 M. B. A. Bldg., Mason City, Iowa.....	June 1, 1920
KENNEDY, CLYDE CHARLES.	58 Sutter St., San Francisco, Cal.....	June 1, 1920
KROMER, CLARENCE HERBERT.	Structural Engr., California State Dept. of Eng., 2121 Eighteenth St., Sacra- mento, Cal.....	{ Assoc. M. May 7, 1913 M. June 2, 1920
LAMB, WILLIAM ALFRED.	Dist. Engr., Water Resources Branch, U. S. Geological Survey, Helena, Mont.....	{ Jun. Nov. 5, 1907 Assoc. M. May 3, 1910 M. April 21, 1920
LEE, ALBERT WALTER.	Chf. Engr., Des Moines Bridge & Iron Works, 4323 Ingersoll Ave., Des Moines, Iowa.....	April 19, 1920
LITTLE, CHARLES NEWTON.	Prof. of Civ. Eng. and Dean, Coll. of Eng., Univ. of Idaho, 818 Elm St., Moscow, Idaho.....	July 6, 1920
LIVERMORE, NORMAN BANKS.	Pres. and Gen. Mgr., Norman B. Livermore & Co., 1306 Merchants-National Bank Bldg., San Francisco, Cal.....	{ Jun. Dec. 5, 1899 Assoc. M. Oct. 1, 1902 M. July 6, 1920
LONG, EUGENE MCLEAN.	Cons. Engr., 82 Beaver St., New York City.....	{ Assoc. M. June 1, 1898 M. July 6, 1920
MCDERMITH, ORO.	Engr., Utah Water Storage Assoc., 302 State Capitol (Res., 667 Remondo Ave.), Salt Lake City, Utah.....	{ Assoc. M. June 6, 1911 M. July 6, 1920
MCWETHY, LEROY.	Res. Representative, U. S. Shipping Board, Emergency Fleet Corporation (Res., Landon Court Apartments, Harrison Boulevard and Grand Ave.), Oakland, Cal.....	{ Jun. Jan. 4, 1910 Assoc. M. Sept. 3, 1913 M. June 2, 1920
MADISON, JAMES TALBOTT.	Field Engr., Dept. of Public Works, Frankfort, Ky.....	{ Assoc. M. Nov. 4, 1914 M. April 21, 1920
MARSTON, FRANK ALWYN.	Designing Engr., Metcalf & Eddy, 14 Beacon St., Boston, Mass.....	{ Jun. Mar. 1, 1910 Assoc. M. Sept. 11, 1917 M. April 21, 1920
MELTON, ARTHUR POMEROY.	833 West Ridge Rd., Gary, Ind.....	{ Assoc. M. Sept. 5, 1911 M. June 2, 1920
MORDEN, EARLE BELL.	Chf., Bureau of Street Cleaning, Room 334, City Hall, Philadelphia, Pa.....	June 1, 1920
MORTLAND, JAMES AUSTIN.	Bridge Engr., State Road Dept., Box 446, Tallahassee, Fla.....	June 1, 1920
MUNDT, WILLIAM CLYDE.	Chf. Engr., The Texas Pipe Line Co. of Oklahoma, Box 1012, Tulsa, Okla.....	{ Assoc. M. June 6, 1911 M. June 2, 1920
NORELIUS, LEWIS MAGNUS.	Vice-Pres., Majestic Furnace & Mfg. Co., 1517 Sixth Ave., Seattle, Wash.....	{ Assoc. M. June 18, 1918 M. April 21, 1920
OKEY, CHARLES WILLIAM.	Drainage Engr., Elliott & Har- man Eng. Co., 144 Fredonia Ave., Peoria, Ill.....	{ Assoc. M. Oct. 1, 1913 M. Mar. 9, 1920
PALMER, EDWARD PENNOCK.	Gen. Supt., Warren, Moore & Co., 347 Madison Ave., New York City.....	June 1, 1920

MEMBERS (*Continued*)

		Date of Membership.
PATTERSON, IRVING WOOSTER.	Chf. Engr., Rhode Island State Board of Public Roads, Box 74, Hamilton, R. I.....	Jun. M.
PEABODY, ALONZO ORRIN.	Asst. State Highway Engr. of New Mexico, Box 111, Santa Fé, N. Mex.....	Assoc. M. M.
PIPER, OSCAR ALBERT.	Asst. Engr. (Dist. Engr.), City Engr.'s Dept., Seattle, Wash.....	Assoc. M.
PITCAIRN, HUGH HARRY.	Highway Engr., Republic Dominicana, Care, Obras Publicas, Santo Domingo, Dominican Republic.....	July 6, 1920
POLHEMUS, JAMES HENRY.	Gen. Mgr. and Chf. Engr., The Port of Portland, 916 Spalding Bldg., Portland, Ore.....	June 1, 1920 Mar. 12, 1918 April 21, 1920
PRUITT, FORREST ALLEN.	Contr. Mgr., Hughes-Foulkrod Co., 623 Oliver Bldg., Pittsburgh, Pa.....	July 6, 1920
RAYMOND, COLES ABEL.	Chf. Engr., The Columbus Structural Steel Co., 234 West 10th Ave., Columbus, Ohio.....	June 1, 1920
ROBINSON, WILLIAM HENRY.	State Engr., Bismarck, N. D.....	June 1, 1920
ROSENBAUM, RAYMOND VICTOR.	Constr. Supt., Sanderson & Porter, Box 117, Charles Town, W. Va.....	Sept. 11, 1917 Assoc. M. M.
ROSSELL, PAUL FRANCIS.	1201 North Clayton St., Wilmington, Del.....	June 2, 1920 Mar. 2, 1909
SAWYER, GEORGE LOYAL.	With Barber-Greene Co., Aurora, Ill.....	Dec. 6, 1915 April 21, 1920
SCOTT, JAMES ROBINSON, JR.	Office Engr. and Contr. Engr., The Colorado Builders Supply Co., 1534 Blake St., Denver, Colo.....	Jan. 8, 1908 July 6, 1920
SILAGI, EUGENE ADALBERT.	Care, Truscon Steel Co., 2 Rector St., New York City.....	Mar. 1, 1910 Sept. 3, 1912
SILLCOX, LEWIS KETCHAM.	Head of Car Dept., C. M. & St. P. R. R., 169 Twenty-sixth St., Milwaukee, Wis.....	April 21, 1920
SMITH, CLARENCE URLING.	Asst. Engr., C. M. & St. P. Ry., Room 7, Union Depot, Milwaukee, Wis. (Res., 4747 Kenwood Ave., Chicago, Ill.).....	June 11, 1917 Mar. 9, 1920
SMITH, DONALD DAVID.	Vice-Pres. and Cons. Engr., Southern Surety Co., 1210 Ford Bldg., Detroit, Mich.....	April 19, 1920 Sept. 5, 1911
SMITH, GODFREY LEWIS.	321 Fifty-fourth St., Newport News, Va.....	Feb. 4, 1913 June 2, 1920
SMITH, KIRBY.	Commander, C. E. C., U. S. A., Army and Navy Club, Washington, D. C.....	Sept. 6, 1910 June 2, 1920
STAINER, MONROE ANDREW.	Engr., M. of W., Fort Worth & Denver City Ry., 116 St. Louis Ave., Fort Worth, Tex.....	July 6, 1920
STARR, FRANK CHARLES.	Maj., Q. M. C., U. S. A.; Const. Q. M., 209 The Argyle, Washington, D. C.....	Sept. 5, 1911 July 6, 1920
STEWART, JOHN.	Pres., Treas. and Chf. Engr., The Cranford Constr. Co., 618 Seventeenth St., N. W., Washington, D. C.....	July 6, 1920
STICKNEY, PARK WASHBURN.	Box 307, Merion Station, Pa.....	Nov. 4, 1908 June 2, 1920
SUTER, RUSSELL.	Senior Asst. Engr., Conservation Comm., Albany, N. Y.....	July 6, 1920
SWALLOW, WALTER AMBROSE.	Maj., Q. M. C., U. S. A., Camp Utilities Office, Camp Sherman, Ohio.....	Jan. 2, 1907 July 6, 1920
		June 1, 1920

MEMBERS (*Continued*)

		Date of Membership.
SWARTZ, FREDERICK PETER.	Dist. Engr., Southern Dist., Frisco Lines, Fort Worth, Tex.	{ Assoc. M. May 7, 1913 M. July 6, 1920
SWIGART, SHERMAN GEORGE.	324 Ohio Bldg., Akron, Ohio.	July 6, 1920
TAYLOR, EDWY LYCURGUS.	Contr. Agt., N. Y., N. H. & H. R. R., 165 Everit St., New Haven, Conn.	{ Assoc. M. Oct. 1, 1913 M. June 2, 1920
TAYLOR, WALTER LUDLOW.	Chf. Draftsman and Office Engr., Public Works Dept., Navy Yard, Philadelphia, Pa.	June 1, 1920
THOMAS, ROBERT SPENCER.	Maj., Corps of Engrs., U. S. A., 352 Government St., Mobile, Ala.	July 6, 1920
THOMPSON, CARROLL ROSE.	Asst. Director, Dept. of Wharves, Docks, and Ferries, Bourse Bldg., Phila.-Pa.	{ Assoc. M. Mar. 12, 1918 M. July 6, 1920
TORREY, JAMES EATON.	Chf. Engr., John W. Ferguson Co., 152 Market St., Paterson, N. J.	{ Assoc. M. May 3, 1905 M. June 2, 1920
TOWL, ROY NATHAN.	Supt. of Public Impvts., 510 City Hall, Omaha, Nebr.	June 1, 1920
TRAVERS-EWELL, ANDREW.	Cons. Engr., 61 Broadway, New York City.	{ Assoc. M. May 28, 1912 M. July 6, 1920
TRAVILLA, JAMES COXEY.	Cons. Highway Engr., The Dunn Wire-Cut Lug Brick Co., 211 North 7th St., Room 1018, St. Louis, Mo.	June 1, 1920
TRINKAUS, WILLIAM HENRY.	Asst. Engr., San. Dist. of Chicago, 708 North May St., Chicago, Ill.	{ Assoc. M. Jan. 13, 1919 M. July 6, 1920
TROELSCH, HENRY WILLIAM.	Care, Am. Bridge Co., 30 Church St., New York City.	June 1, 1920
TRUMPOUR, FREDERICK JAMES.	Civ. Engr., Constr. Div., U. S. A., Picatinny Arsenal, Dover, N. J.	June 1, 1920
WADDINGTON, THOMAS WASHINGTON.	Mech. Supt. and Chf. Engr. of Bayway Refinery, Standard Oil Co., Box 16, Elizabeth, N. J.	June 1, 1920
WAID, ROBERT NEIL.	Div. Engr., State Highway Dept., 633 North St., Piqua, Ohio.	July 6, 1920
WAITE, DONALD CRAMER.	Road Engr., I. R. T. Co., 89 Greenwich St., New York City (Res., 1397 East 17th St., Brooklyn, N. Y.).	{ Jun. Jan. 3, 1905 Assoc. M. April 5, 1910 M. June 2, 1920
WALKER, FRED BACON.	Care, H. W. Johns-Manville Co., 1737 South Michigan Ave., Chicago, Ill.	{ Assoc. M. Sept. 3, 1912 M. July 6, 1920
WIEGHARDT, GEORGE FREDERICK.	Highways Engr., City of Baltimore (Res., 3210 Walbrook Ave.), Baltimore, Md.	July 6, 1920
WINDROW, ROLLEN JOE.	State Highway Engr., Austin, Tex.	{ Assoc. M. Sept. 2, 1914 M. April 21, 1920

## ASSOCIATE MEMBERS

AGUERREVERE, ENRIQUE.	Care, National Petroleum Corporation, Apar-tado 285, Tampico, Tam., Mexico.	June 1, 1920
AKERS, JAMES CLARK.	Cons. Engr. (Freeland, Roberts & Akers), 1212 Independent Life Bldg., Nashville, Tenn.	July 6, 1920
ALIN, AKE LUDWIG.	With Royal Swedish Board of Waterfalls, Reger-ingsgatan 45, Stockholm, Sweden.	July 6, 1920
ANDERSON, ROY LEONARD.	Engr. and Salesman, California Corrugated Culvert Co., West Berkeley, Cal.	{ Jun. June 11, 1917 Assoc. M. April 19, 1920
BAER, BERNARD EDWARD.	Capt., Engrs., U. S. A., P. O. Box 74, Leavenworth, Kans.	{ Jun. Mar. 11, 1919 Assoc. M. July 6, 1920

ASSOCIATE MEMBERS (*Continued*)Date of  
Membership.

BAKER, HARRY SAMUEL. Prin. Asst. Engr., Spokane County, 2007 Sinto Ave., Spokane, Wash.....	July 6, 1920
BARITELL, AUGUST JOHN. Designer, Monongahela County Road Dept., R. F. D. No. 1, Morgantown, W. Va.....	June 1, 1920
BARNES, HENRY WILFRID. P. O. Box 500, Guayaquil, } Jun. Ecuador..... } Assoc. M.	April 30, 1912 Oct. 14, 1919
BARTON, ELMER CLYDE. County Road Engr., McNutt Bldg., Princeton, W. Va.....	July 6, 1920
BENDER, HOMER CHARLES. Supt., Public Utilities, City of Spokane, S-1106 F St., Spokane, Wash.....	June 1, 1920
BEST, FRANCK PHILLIPS. With Morris Knowles, Inc., 1200 Jones Bldg., Pittsburgh, Pa.....	June 1, 1920
BINGER, WALTER DAVID. Vice-Pres. and Treas., Thompson } Jun. & Binger, Inc., 280 Madison Ave., New York City... } Assoc. M.	May 15, 1917
BLAINE, ELMER STYNER. Res. Engr., Little River Drain- } Jun. age Dist., 407 H. H. Bldg., Cape Girardeau, Mo.... } Assoc. M.	June 1, 1920 May 6, 1914
BLENUS, ANSON MORSE. Designing Engr., The Texas Co., 552 Second Ave., North Pelham, N. Y.....	July 6, 1920
BLISS, CLARENCE ROBINSON. Asst. Engr., Power Constr. Co. 35 Harvard St., Worcester, Mass.....	July 6, 1920
BOLMER, MAURICE THEODORET. Care, Punta Alegre Sugar Co., Punta San Juan, Cuba.....	July 6, 1920
BOOTHE, FRANK SIMMONS. Res. and Asst. Engr., City and County of San Francisco, Hetch Hetchy Water Supply, Groveland, Cal....	April 19, 1920
BOYD, CHARLES OSCAR. Dist. Highway Engr. for Raleigh County, Box 575, Beckley, W. Va.....	June 1, 1920
BOYKIN, RICHARD PEGRAM. 63 Annandale Ave., Asheville, N. C....	June 1, 1920
BOYLE, BLAIR. County Engr., Bourbon County, Court House, Fort Scott, Kans.....	July 6, 1920
BRIGGS, ANDREW GORDON. Div. Engr., Dickinson & Watkins, Walnut Ridge, Ark.....	June 1, 1920
BROWNELL, OTTO ELLSWORTH. With Morell & Nichols, 900 Palace Bldg., Minneapolis, Minn.....	July 6, 1920
BUCHANAN, WALTER JOHN. Asst. to Prof. of Technical Chemistry, Royal Technical Coll., Fairholm, Giffnock, } Jun. Renfrewshire, Scotland..... } Assoc. M.	April 30, 1912 July 6, 1920
BUCHECKER, ALBERT ISRAEL. Engr. of Sewers, W. 725 Chelan Ave., Spokane, Wash.....	Jan. 19, 1920
BURLEIGH, CHARLES RANDALL. Care, Fred T. Ley & Co., Inc., 19 West 44th St., New York City.....	July 6, 1920
BURNHAM, WALTER CLINTON. Asst. Engr., Highway Dept., State of Oklahoma, 805 West 10th, Oklahoma, Okla.....	April 19, 1920
BUTTERWORTH, ARTHUR SACKETT. Eng. Dept., Am. Gas Co., } Jun. West Washington Sq., Philadelphia, Pa.... } Assoc. M.	Sept. 10, 1918 June 1, 1920
CALDWELL, WALLACE LYON. Director, Dept. of Roads and Pavements, Pittsburgh Testing Laboratory, 235 Clark Bldg., Birmingham, Ala.	June 1, 1920
CAMPBELL, HOWARD DOUGLAS. Steel and Concrete Designer, Ballinger & Perrot, Philadelphia, Pa. (Res., 126 Maple Terrace, Merchantville, N. J.).....	June 1, 1920

ASSOCIATE MEMBERS (*Continued*)

	Date of Membership.
CAMPBELL, JAMES KENNETH. Cons. Engr. (Eadie, Freund & Campbell), 7 West 45th St., New York City.....	June 1, 1920
CANFIELD, LLOYD ANGLE. (The Canfield Eng. Co.), 406 Flynn Bldg., Des Moines, Iowa.....	Jan. 19, 1920
CARPENTER, SINCLAIR ERNEST. Structural Engr., Gas Dept., Pacific Gas & Elec. Co., 5476 Kales Ave., Oakland, Cal.....	{ Jun. May 6, 1914 Assoc. M. July 6, 1920
CARROLL, WILLIAM JOSEPH. Asst. Engr., Pennsylvania State Highway Dept., Bellefonte, Pa.....	June 1, 1920
CARTER, GEORGE NEAL. Asst. Engr., Twin Falls North Side Land & Water Co., Jerome, Idaho.....	July 6, 1920
CARUTHERS, LAVOIZARE BLAIR, JR. Chf. of Party, in Chg. of Constr. Am. Rio Grande Land & Irrig. Co., Box 142, Mercedes, Tex.....	April 19, 1920
CHAMBERS, LEON OLIVER. Civ. Engr., Spokane Water Div., Room 306, City Hall, Spokane, Wash.....	July 6, 1920
CHATFIELD, CHARLES LYMAN. Irrig. Engr., State Land Office, Denver, Colo.....	July 6, 1920
CLARK, JEWELL STANLEY. 5827 Dorchester Ave., Chicago, Ill.....	June 1, 1920
COBLE, RALPH PARKER. Secy. and Treas., Atlantic Bridge Co., Box 871, Roanoke, Va.....	April 10, 1920
COLLIER, IRA LEONARD. Asst. Prof., Civ. Eng., Univ. of Washington, 6019 Thirty-fourth Ave., N. E., Seattle, Wash.....	{ Jun. May 7, 1913 Assoc. M. Mar. 9, 1920
COLVIN, ROBERT ENOCH. 305 Furniture Bldg., Evansville, Ind.....	July 6, 1920
CONVERSE, WILLIAM IRVING. Box 434, Eastland, Tex.....	April 19, 1920
COOLIDGE, RICHARD NEWELL. 211 South Park St., Streator, Ill.....	June 1, 1920
COPELAND, LYMAN FRANCIS. Senior Bridge Engr., Dist. 3, U. S. Bureau of Public Roads, 1517 Logan St., Denver, Colo.....	July 6, 1920
CORBLLIS, FAYDETTE DEAN. Engr. of Constr., Flynt Bldg. & Const. Co. Palmer (Res., 34 East Main St., Webster), Mass.....	June 1, 1920
CRECELIUS, WALTER REINHARDT. Senior Engr., Dept. of Bridges and Bldgs., Dept. of the President, City of St. Louis, 301 City Hall (Res., 3723 Bamberger Ave.), St. Louis, Mo.....	July 6, 1920
CUSHMAN, JAMES ALLERTON. Res. Engr., Power Constr. Co., Vernon, Vt.....	June 1, 1920
DAVIS, LOUIS MORRIS. Engr., Truscon Steel Co., 1 West Main St., Bound Brook, N. J.....	June 1, 1920
DAWSON, JOHN STANLEY. Div. Engr., Dept. of Roads, State of Kentucky, 483 East High St., Lexington, Ky.....	June 1, 1920
DAY, JOHN CHARAVELLE. Pilot Engr., Roadway and Structures, Interstate Commerce Comm., 520 West Scott St., Springfield, Mo.....	June 1, 1920
DEAKMAN, HOMER WARD. Supt. of Constr., Hegeman-Harris Co., New York City (Res., 249 Argyle Rd., Brooklyn, N. Y.).....	June 1, 1920
DE CHARMS, RICHARD, JR. Care, Office of Chf. Engr., C. R. R. of N. J., Jersey City Terminal, Jersey City, N. J.....	{ Jun. Feb. 4, 1914 Assoc. M. June 1, 1920
DERBY, ERNEST COFIELD. County Engr., Cumberland County; City Engr., Fayetteville, N. C.....	July 6, 1920
DILLING, ALBERT WALLWICK. Acting Engr. of Bridges, City of Chicago, Room 402, City Hall, Chicago, Ill.....	July 6, 1920

ASSOCIATE MEMBERS (*Continued*)Date of  
Membership.

DLYN, HARRY LOUIS MALVIN.	Structural Engr., Am. Car & Foundry Co., 165 Broadway (Res., 794 Elsmere Pl.), New York City.....	June 1, 1920
DONALD, CHARLES PRENTISS.	County Engr. of Highways and Bridges, Fredonia, Kans.....	April 19, 1920
DRIVER, HERSCHEL WOOD.	Engr., The Boldt Constr. Co., 1823 Haldane Rd., Cleveland, Ohio.....	July 6, 1920
DUFF, EDWARD EVERETT, JR.	Dist. Engr., Eastern Paving Brick Mfrs. Assoc., 3402 Schaffer Pl. (South Hills Station), Pittsburgh, Pa.	April 19, 1920
DUNLAP, ROBERT MURATT.	Chf. Engr. and Sales Engr., Federal Cement Tile Co., 920 Westminster Bldg., Chicago, Ill.....	Mar. 9, 1920
EARLE, ROSCOE K.	City Engr., City Hall, Davenport, Iowa.....	June 1, 1920
EDDY, ADOLPHUS JAMES.	902 San Benito Rd., Berkeley, Cal.....	Dec. 6, 1910
EGNER, CARL ALEXANDER.	Junior Hydr. and Geodetic Engr., U. S. Coast and Geodetic Survey, Warsaw, Ind.....	July 6, 1920
EVANS, DONALDSON HAMPTON.	Structural Draftsman, King County Engr.'s Office, Bridge Dept., 10246 Rainier Ave., Seattle, Wash.	July 6, 1920
EVERHARD, PAUL HENRY.	Contr. Agt., Pioneer Constr. Co., 127 North Estelle Ave., Wichita, Kans.....	July 6, 1920
FAIRBANKS, ADOLPHE ST. ARMANT.	Capt., Engrs., U. S. A., Office of Const. Q. M., Army Supply Base, New Orleans, La.....	June 1, 1920
FAJARDO, JULIO.	Chf. Engr., Departamento del Valle, Cali, Colombia.....	July 6, 1920
FILBERT, RICHARD HAGMAN.	Supt., Eastern Paving Co., 2254 North 15th St., Philadelphia, Pa.....	June 1, 1920
FLAGG, HERBERT JUDSON.	Chf. Engr., The Public Service Comm. of Washington, Olympia, Wash.....	Oct. 3, 1911
FOWLE, BERNARD HOOE, JR.	Dist. Engr., Utah State Road Comm., Nephi, Utah.....	Assoc. M. April 19, 1920
FRANCK, GEORG GUSTAV SCHLICHTING.	Care, Am. Trading Co., Inc., Reconquista 652, Buenos Aires, Argentine Republic.....	July 6, 1920
FRANK, HARRY HARRIS.	With The Hunting-Davis Co., 753 Mellon St., Pittsburgh, Pa.....	Mar. 9, 1920
FRY, DAVID WARNER.	Asst. Engr., B. & O. R. R., 1303 B. & O. Bldg., Baltimore, Md.....	June 1, 1920
FULLER, MERTON OTIS.	Asst. Prof., Civ. Eng., Lehigh Univ., 732 Ave. H, Bethlehem, Pa.....	June 1, 1920
GEREN, PRESTON MURDOCH.	Chf. Engr., J. F. Johnson, 609 Littlefield Bldg., Austin, Tex.....	June 1, 1920
GULCHRIST, GILBERT HOUSTON.	Div. Engr., 6th Dist., State Highway Dept., 927 Fulton St., San Antonio, Tex.....	July 6, 1920
GLESSNER, MAURICE DAVID.	Asst. County Engr., Yuma County, Yuma, Ariz.....	Mar. 9, 1920
GRAY, BERNARD ELBERT.	U. S. Highway Engr., U. S. Dept. of Agriculture, Bureau of Public Roads, Box 1476, Charleston, W. Va.....	Jan. 13, 1919
GRIDLEY, CHARLES ALBERT.	35 South Miller St., Newburgh, N. Y.....	Nov. 25, 1919
GRIGSBY, WALTER BERTON.	Care, Truscon Steel Co., 110 West 40th St., Room 1902, New York City.....	June 1, 1920
HADDEN, GAVIN.	233 Broadway, New York City.....	Oct. 10, 1916
		Assoc. M. April 19, 1920
		June 1, 1920

ASSOCIATE MEMBERS ( <i>Continued</i> )		Date of Membership.
HALLAHAN, JOHN PATRICK HENRY. Gen. Supt., George F. Pawling & Co., 1628 Real Estate and Trust Bldg., Philadelphia (Res., 351 North Owen Ave., Lansdowne), Pa.....		June 1, 1920
HANCOCK, JOHN SEALE. Asst. Engr., Bridge Valuation Dept., N. Y. C. R. R., 1279 West 117th St., Cleveland, Ohio.....		July 6, 1920
HARRISON, JAMES SAMUEL, JR. Gen. Contr. (J. S. Harrison & Sons), 1312 Amicable Bldg., Waco, Tex.....		July 6, 1920
HART, CHARLES ELLETT. Engr., Truscon Steel Co., 600 Owen Bldg., Detroit, Mich.....		June 1, 1920
HASTINGS, BERTHOLD FRANCIS. Structural Engr., H. G. Balcom, 1501 Main St., Bridgeport, Conn.....		July 6, 1920
HEAP, GEORGE ROSCOE. Engr., Emergency Fleet Corporation, 4210 Osage Ave., Philadelphia, Pa.....		June 1, 1920
HEVENOR, HERMAN PHILIP. Engr. and Contr. (Engle & Hevenor), 220 Broadway, New York City.....		June 1, 1920
HOLDEN, WILLIAM. Gen. Secy., Chamber of Commerce, Jun. Sioux City, Iowa.....	{ Jun. Assoc. M.	Mar. 4, 1914 June 1, 1920
HOLT, ANDREW HALL. Asst. Prof. of Civ. Eng., Coll. of Applied Science, State Univ. of Iowa, Engineering Bldg., Iowa City, Iowa.....	{ Jun. Assoc. M.	Sept. 3, 1913 June 1, 1920
HOLWAY, WILLIAM REA. (Holway Eng. Co.), 230 Lynch Bldg., Tulsa, Okla.....		April 19, 1920
HOWARD, CECIL WARD. Gen. Supt., Wells Bros. Constr. Co., 1355 Bates Ave., Springfield, Ill.....	{ Jun. Assoc. M.	Jan. 7, 1913 April 19, 1920
HULL, WALTER LAWRENCE. City Engr., City Hall, Orange, N. J.....		Jan. 19, 1920
HUNT, GEORGE ALVIN. Lt.-Col., C. W. S., U. S. A., 701 Santa Fé Bldg., San Francisco, Cal.....	{ Jun. Assoc. M.	Feb. 6, 1912 April 19, 1920
JESSUP, LOUIE THEODORE. Drainage Engr., Irrig. Investigations, U. S. Dept. of Agriculture, Box 324, Yakima, Wash.....		July 6, 1920
JUDD, THOMAS HENRY. Engr., Columbia Basin Survey Comm., 23 East Sharp Ave., Spokane, Wash.....		July 6, 1920
KEITH, HAROLD WILLIAM. Engr., Hercules Powder Co., 2325 Channing Way, Berkeley, Cal.....		June 1, 1920
KELSO, BYRON LYNN. 5498 Cornell Apartment, No. 4, Chicago, Ill.....		June 1, 1920
KERN, FRANCIS XAVIER. 4344 Boone St., Manayunk, Philadelphia, Pa.....		June 1, 1920
KRACH, FRED ROY. Supt. of Constr., Sherwin Williams Co. (Res., 6340 Sangamon St.), Chicago, Ill.....	{ Jun. Assoc. M.	July 2, 1913 June 1, 1920
KUNESH, JOSEPH FRANCIS. Asst. Engr., U. S. Geological Survey, Care, U. S. Geological Survey, Tucson, Ariz.....		June 1, 1920
LAIRD, ALEXANDER ANDREW. Res. Engr., Federal Aid Roads for Allen County, Box 74, Iola, Kans.....		July 6, 1920
LAMBERT, JOHN ROBERT. Asst. Engr., Phoenix Bridge Co., 239 Fourth Ave., Phoenixville, Pa.....		April 19, 1920
LANE, WILLIAM WALTER. Highway and County Engr., Pinal County Highway Comm., Florence, Ariz.....		June 1, 1920
LARKIN, CHARLES RAYMOND. Asst. Engr., Bureau of Health, 2242 West Lehigh Ave., Philadelphia, Pa.....	{ Jun. Assoc. M.	Jan. 14, 1918 June 1, 1920
LEE, DON. Sales Engr., The Lakewood Eng. Co., 711 Sumpter Bldg., Dallas, Tex.....		July 6, 1920

ASSOCIATE MEMBERS (*Continued*)

		Date of Membership.
LEVERING, HOWARD ALLEN.	County Road Engr., Wayne County, Ceredo, W. Va.	June 1, 1920
LOGAN, EUGENE.	Field Engr., Washington Water Power Co., Spokane, Wash.	Jan. 19, 1920
LOGAN, GEORGE ROSS.	City Hall, Cisco, Tex.	June 1, 1920
LONERGAN, PAT.	Vice-Pres. and Mgr., Smythe-Lonergan Co., Pendleton, Ore.	June 1, 1920
LONG, MILO SMITH.	Chf. of Surveys, Alabama Power Co., Birmingham, Ala.	July 6, 1920
MARTIN, WARREN LEE.	1805 State St., Harrisburg, Pa.	July 6, 1920
MATHEWS, CHARLES ARCHIE.	Asst. Engr., Bureau of Highways, City of Philadelphia, 108 South 40th St., Philadelphia, Pa.	July 6, 1920
MAZEAU, ALBAN.	Engr., National Biscuit Co., 1203 Fulton Ave., New York City.	July 6, 1920
MERTZ, LOUIS GROVER, JR.	Cons. Engr., Valentine Lynch & Co., 13 Park Row, New York City (Res., 1297 Sterling Pl., Brooklyn N. Y.)	June 1, 1920
MEISE, GEORGE JOHN.	3316 Barker Ave., New York City	April 1, 1914 Mar. 9, 1920
MILHAN, DAVID NELSON.	Asst. Constr. Engr., Sinclair Refining Co., 815 West Eighth St., Coffeyville, Kans.	Jan. 15, 1917 Assoc. M. Jun.
MILLER, FRANK THOMAS.	Huffine Hotel, Greensboro, N. C.	July 6, 1920
MILLER, HARRY LOU.	Engr. in Chg., Highway Eng. Dept., Clark E. Jacoby Eng. Co., 1907 Linwood Boulevard, Apartment 1, Kansas City, Mo.	July 6, 1920
MILLER, HARRY NIXON.	(H. N. Miller & Co.), Middle City Bldg., Philadelphia, Pa.	Jan. 19, 1920
MILLER, MAX.	Structural Designer, Bureau of Yards and Docks, U. S. N., 103 West 46th St., New York City.	June 1, 1920
MILLER, ROBERT MONFORT.	Care, Chf. Engr., Virginian Ry., Norfolk, Va.	April 19, 1920
MILLS, THORNTON ALLEN, JR.	Care, Thos. G. Miller, 1046 Forty-seventh St., Oakland, Cal.	July 6, 1920
MITCHELL, LOUIS.	Prof. of Civ. Eng., Syracuse Univ., 515 Walnut St., Syracuse, N. Y.	Mar. 14, 1916 Assoc. M. June 2, 1920
MOHLER, JOHN DONALD.	Special Highway Engr., Special Highway Dept., Buchanan County, Court House, St. Joseph, Mo.	Jan. 19, 1920
MONROE, ROBERT ANSLEY.	Asst. Engr., Pacific Gas & Elec. Co., 3036 Regent St., Berkeley, Cal.	April 2, 1913 Assoc. M. June 1, 1920
MONTGOMERY, CRANSTON PARKER.	Res. Engr., California Highway Comm., 115 East 5th St., Long Beach, Cal.	June 1, 1920
NEEDELS, THEODORE STANTON.	With King Bridge Co., 10409 Yale Ave., Cleveland, Ohio.	June 1, 1920
NEUDECKER, EMERET CLAUDE.	Care, State Highway Dept., Storm Lake, Iowa.	April 19, 1920
PAGE, OTIS MOORE.	Surv. and Engr., Dillon, S. C.	July 6, 1920
PAINTER, CARL ELLIOTT.	Sales Engr., The D. C. Dunbar Co., 325 Walker Bank Bldg., Salt Lake City, Utah.	July 6, 1920
PATTERSON, HAROLD JOHN.	2214 Whitesboro St., Utica, N. Y.	June 1, 1920
PEARCE, RUFUS BURLESON.	1025 Lipscomb St., Fort Worth, Tex.	Nov. 28, 1916 Assoc. M. June 1, 1920

ASSOCIATE MEMBERS (*Continued*)

		Date of Membership.
PEEK, JESSE HOPE.	Production Engr., Maryland Dry Dock Shipbuilding Co., Baltimore, Md.	Jun. Assoc. M. Jun. 1, 1920
PERSON, HORACE HAMILTON.	Supt. of Constr., Cost Dept., Merchant Shipbuilding Corporation, 228 Harrison St., Harriman, Pa.	July 6, 1920
PHILIP, HENRY ARTHUR.	Engr., Frederick A. Phelps, 11 Clinton St., Newark (Res., 406 Hillside Ave., Nutley), N. J.	July 6, 1920
QUIGLEY, LOUIS GORDON.	Sales Engr., The Barrett Co., Paving Dept., 1200 Otis Bldg., Chicago, Ill.	June 1, 1920
REEVES, AUSTIN HUNSICKER.	115 Hampton St., Elmhurst, N. Y.	June 1, 1920
REYNOLDS, JOHN FRANKLIN.	Dist. Engr., Iowa Highway Comm., Storm Lake, Iowa.	July 6, 1920
RHODES, ERIC HOUGHTON.	Ronaki, 96 Remuera Rd., Auckland, New Zealand.	Aug. 31, 1915 Assoc. M. Jan. 19, 1920
RICHARDS, WALTER ALAN.	Res. Engr., Lockwood, Greene & Co., for Columbus Mfg. Co., Columbus (Res., Wynnton), Ga.	Jun. Assoc. M. Dec. 6, 1915 June 1, 1920
RIDGWAY, HERBERT.	Estimator and Designer, Am. Bridge Co., 30 Church St., New York City.	July 6, 1920
ROBERTS, DEERING SAMUEL.	Chf. Appraisal Engr., Cooley & Marvin Co., 10 Winthrop Ave., Wollaston, Mass.	July 6, 1920
ROOT, WALTER HAROLD.	Engr., Road Maintenance, State Highway Comm., 818 Eighth St., Ames, Iowa.	Mar. 9, 1920
ROWE, EDGAR ALAN.	Asst. Engr., J. B. Lippincott, 1104 Central Bldg., Los Angeles, Cal.	July 6, 1920
RUMPF, CHARLES POWER.	Supt. with Dreher, Churchman, Paul & Ford, 7 Rhea Terrace, Fairmont, W. Va.	June 1, 1920
RUTAN, FRANKLIN GUY.	Supt. of Constr., on Penn-Alto Hotel Constr., for H. L. Stevens & Co., Box 204, Altoona, Pa.	July 6, 1920
ST. JOHN, ROYAL UPSON.	Dist. Engr., Standard Oil Co., Sacramento, Cal.	July 9, 1912 Assoc. M. June 1, 1920
SALMOND, JAMES, JR.	27 Elizabeth Ave., Arlington, N. J.	June 1, 1920
SANDERS, MARK SEBASTIAN.	With Truscon Steel Co. of Japan, 99, Kita Machi, Kobe, Japan.	Mar. 9, 1920
SANDQUIST, OSCAR ADOLPH.	Care, The Goodyear Tire & Rubber Co. of South America, Rio de Janeiro, Brazil.	Nov. 25, 1919
SARASON, SAMUEL DAVIS.	Asst. Prof. of Civ. Eng., Syracuse Univ., 834 Sumner Ave., Syracuse, N. Y.	April 19, 1920
SCHACH, NIELS FERMANN.	Dist. Engr., Dirección Gen. de Obras Públicas, Santo Domingo, Dominican Republic.	July 6, 1920
SCHROEDEL, OTHELLO HENRY.	(Baumgartner & Schroedl), 44 Vansant Bldg., Baltimore, Md.	July 6, 1920
SHANNON, CHARLES AUGUSTUS.	City Engr., Nebraska City, Nebr.	Jan. 19, 1920
SHARP, WILBUR LOUIS.	63 Railway Exchange Bldg., Portland, Ore.	April 19, 1920
SHEILS, HENRY CONNOR.	Engr. and Contr., 1079 Columbus Ave., Boston, Mass.	July 6, 1920
SHIDLER, WADE WESLEY.	Engr., R. Winthrop Pratt, 513 Home Savings and Loan Bldg., Youngstown, Ohio.	June 1, 1920
SHOCKLEY, CLYDE ARTHUR.	(Shockley Eng. Co.), 800 Graphic Arts Bldg., Kansas City, Mo.	June 1, 1920

ASSOCIATE MEMBERS (*Continued*)

		Date of Membership.
SLOAN, WILLIAM GLENN.	Care, Utah Constr. Co., Arco, Idaho.	Jun. } Assoc. M. } Jun. 6, 1915 June 1, 1920
SMITH, STUART RAYMOND.	Architectural Engr.; Production Examiner, Emergency Fleet Corporation, 889 North 44th St., Philadelphia, Pa.	July 6, 1920
SNELL, MERRILL FORESTER.	Designing Engr., Am. Bridge Co., Frick Bldg. (Res., 1529 Evanston St., Corliss Station), Pittsburg, Pa.	Mar. 9, 1920
SPARR, HOMER STANLEY.	Shickshinny, Pa.	April 19, 1920
STANSEL, HORACE SYLVAN.	Engr. in Chg., Fourth and Fifth Road Dists., Sunflower County, Box A, Ruleville, Miss.	July 6, 1920
STEWART, JOHN LOGAN.	Structural Engr., U. S. Gypsum Co., 202 East 55th St., Chicago, Ill.	July 6, 1920
STRADLING, REGINALD EDWARD.	Lecturer, Civ. Eng. Dept., Univ. of Birmingham, Birmingham, England.	June 1, 1920
STRINGFELLOW, HENRY AYLESBURY.	Care, Muller, Phipps & Hodges (China), Ltd., 25 West 44th St., New York City.	April 19, 1920
SUMMERS, RICHARD ELVIN JEWELL.	Structural Engr., The H. K. Ferguson Co., 6523 Euclid Ave. (Res., 1727 Bryn Mawr Rd., Suite 1), Cleveland, Ohio.	Jun. } Assoc. M. } Nov. 4, 1914 April 19, 1920
SUTTON, LEON PAUL.	Cons. Engr. (Peckham & Sutton), 225½ West Grand Ave., Oklahoma, Okla.	July 6, 1920
SWANK, CLYDE ELMO.	Res. Engr., State Highway Dept., Charles-ton, Mo.	June 1, 1920
TEN HAGEN, HENRY.	County Engr., State Comm. of High-ways, Warsaw, N. Y.	Feb. 4, 1914 June 1, 1920
THOMPSON, MISSAC.	Reinforced Concrete Engr., 189 Mon-tague St., Brooklyn, N. Y.	Jun. } Assoc. M. } June 16, 1919 July 6, 1920
TIMMONS, ALBERT EGGLESTON.	Chf. Draftsman, County Surveyor's Office, 4222 Denker Ave., Los Angeles, Cal.	July 6, 1920
TOBEY, HAROLD EUGENE.	Structural Engr., H. C. Frick Coke Co., Box 152, Scottdale, Pa.	July 6, 1920
TODD, WALTER STANLEY.	Asst. Bridge Engr., Illinois State Highway Dept., Springfield, Ill.	June 1, 1920
TOSI, JOSEPH ANDREW.	In Chg. of Drafting and Estimating Room, E. J. Cross Co., Box 65, Station A, Worcester, Mass.	July 6, 1920
TRUE, GUY WINFORD.	Asst. Engr., Panama Canal, Box 44, Balboa Heights, Canal Zone, Panama.	July 6, 1920
TRUESDELL, STEPHEN RIGGS.	Draftsman, Bridge Dept., C. & N. W. Ry., 226 West Jackson Boulevard, Chicago, Ill.	Jun. } Assoc. M. Oct. 9, 1917 July 6, 1920
WAGNER, RICHARD FREDERICK.	Asst. to City Engr., Filtration Plant, Lynchburg, Va.	June 1, 1920
WAITE, CLEMENT F.	Locating and Res. Engr., Oregon High-way Comm., Camas Valley, Ore.	May 31, 1916 Jun. } Assoc. M. July 6, 1920
WALKER, GUY BERT.	Second Asst. Engr., Bureau of Engrs., City Engr.'s Office, City Hall, Wilkes-Barre, Pa.	Jun. } Assoc. M. Dec. 3, 1913 July 6, 1920
WALWORTH, ROY EUGENE.	Land Appraiser, D. L. & W. R. R., 1012 Press Bldg., Binghamton, N. Y.	July 6, 1920
WARRACK, JAMES BALDWIN.	Engr. and Contr. (Warrack Constr. Co.), 4150 Arcade Bldg., Seattle, Wash.	Jun. } Assoc. M. Jan. 3, 1911 July 6, 1920

ASSOCIATE MEMBERS ( <i>Continued</i> )		Date of Membership.
WATERMAN, HARRISON MORTON. Supt. of Constr., Walter Kiddle & Co., 2014 Waly Ave., New York City.....	Jun.	April 19, 1920
WEAVER, FRANK LLOYD. Asst. Engr., Clarence W. Hubbell, Grosse Ile, Mich.....	{ Jun. Assoc. M.	April 18, 1916 July 6, 1920
WEBB, CLAUDE ALLEN. Field Engr., Service Bureau, Universal Portland Cement Co., 210 South La Salle St., Chicago, Ill.....	{ Jun. Assoc. M.	April 18, 1916 July 6, 1920
WELLER, CURTIS D. County Highway Engr., Guthrie County, Guthrie Center, Iowa.....		Nov. 25, 1919
WELLS, JAMES BERTRAND. Civ. Engr., Standard Oil Co. of California, 365 Guinda St., Palo Alto, Cal.....	{ Jun. Assoc. M.	Jan. 7, 1913 July 6, 1920
WENDELBOE, LEE. Care, Oregon State Highway Comm., Beaver, Ore.....	{ Jun. Assoc. M.	Dec. 3, 1913 April 19, 1920
WESTON, ARTHUR DANIELS. Prin. Asst. Engr., Eng. Div., Massachusetts State Dept. of Health, Room 141, State House, Boston, Mass.....		April 19, 1920
WESTON, CLARENCE MCLELAN. 200 Fifth Ave., Room 1303, New York City.....		June 1, 1920
WHITE, FRANK MORTON. Dist. Engr., Corrugated Bar Co., 1515 Great Northern Bldg., Chicago, Ill.....		July 6, 1920
WICKES, HOWARD CHARLES. Care, G. F. Wickes, 1435 Seventh St., Des Moines, Iowa.....		Mar. 9, 1920
WILLIAMS, DANIEL McGREGOR. With Charles E. Waddell, 78 Patton Ave., Asheville, N. C.....		June 1, 1920
WILLIAMS, RICHARD GILES. With U. S. Bureau of Public Roads, Box 191, Little Rock, Ark.....		Nov. 25, 1919
WILSON, DUDLEY MOORES. Care, Texas Constr. Co., Box 726, Eastland, Tex.....		June 1, 1920
WINBLAD, CARL EMIL. Engr., Canadian Eng. Agency, Inc., 115 Broadway, New York City (Res., 27 Stephens Court, Brooklyn, N. Y.)		June 1, 1920
WINSLOW, BURTON LYMAN. Asst. Engr., Bureau of Water-Works Impvt. of Akron, 102 East Mill St., Akron, Ohio.....		July 6, 1920
WISE, JAMES GARFIELD. Asst. Engr., N. Y. C. R. R., 16 Myrtle St., White Plains, N. Y.....		June 1, 1920
WOOD, EDWARD AINSLIE. Res. Engr., Metropolitan Development Assoc., Chamber of Commerce, 2616 Maple Ave., Dallas, Tex.....		April 19, 1920
WOOD, VAUGHN. Asst. Engr., Imperial Irrig. Dist., Box 353, Calexico, Cal.....		July 6, 1920
WOOLLEY, HORACE MELDRUM, JR. Asst. Engr., MacDonald & Kahn, 1426 Willow St., Alameda, Cal.....		April 19, 1920
WRIGHT, FREDERICK JOHN. Prin. Asst. County Engr., Passaic County, 181 Fulton Pl., Paterson, N. J.....	{ Jun. Assoc. M.	Jan. 7, 1913 April 19, 1920
YOUNG, CHARLES HENRY. Pres., Central States Eng. Co., 603 Laurel Bldg., Muscatine, Iowa.....		April 19, 1920
ZANDER, GORDON. Civ. Engr., State Water Comm., 1316 Spruce St., Berkeley, Cal.....		June 1, 1920
ZEIGLER, FREDERICK CLAUDE. 2226 West 17th St., Wilmington, Del....		June 1, 1920

## ASSOCIATES

	Date of Membership.
ADAMS, ARTHUR CLELL. County Engr., Christian County, Ozark, Mo.	July 6, 1920
CRAVEN, WILLIAM DARCY, JR. 26 Broadway, Room 1306, New York City.	Nov. 25, 1919
GARGES, SAMUEL JOSEPH. Commr., Dept. of Public Works, City Hall, New Rochelle, N. Y.	April 19, 1920
GEHRIG, ARTHUR GUSTAVE. Associate Prof., Civ. Eng., Univ. of Nebraska, 203 Mechanic Arts Hall, Lincoln, Nebr.	July 6, 1920
LIBBERTON, JESSE HERBERT. Mgr., Service Bureau, Universal Portland Cement Co., 210 South La Salle St., Chicago, Ill.	April 19, 1920
MACKENZIE, JAMES RICHARD DONALD. Sales Engr., The Barrett Co., Kansas City, Mo.	June 1, 1920
McGOVERN, PATRICK. Contr., 50 East 42d St., New York City.	July 6, 1920
STROCK, EARL JAYSON. Supt., Colorado Portland Cement Co., Portland, Ore.	June 1, 1920

## JUNIORS

AKERS, EDWIN RYAN. Reinforced Concrete Designer, Snare & Triest Co., 8 West 40th St., New York City.	July 6, 1920
AMBLER, JESSE PAUL. Insp. and Res. Engr., Pennsylvania State Highway Dept., Erdenheim, Pa.	June 1, 1920
BAKER, AVEY MARTIN. 2454 Webb Ave., New York City.	Mar. 9, 1920
BERNI, ALBERT FREDERICK. Draftsman and Designing Engr., Hurley Mason Co., 528 Belmont St., Portland, Ore.	July 6, 1920
BONSALL, JUDSON. Engr., Carnegie Land Co., 1947 Perrysville Ave., Pittsburgh, Pa.	June 1, 1920
BORSTELMANN, LOUIS JOHN. Field Engr., Portland Cement Assoc., 710 Grove St., Johnstown, Pa.	Nov. 25, 1919
CAIRD, ALEXANDER WINTON. Draftsman, Stone & Webster, 316 Huntington Ave., Boston, Mass.	April 19, 1920
CARTWRIGHT, CHARLES BARNES. Res. Engr., Michigan State Highway Dept., 220 County Bldg. (Res., 166 Alexandrine Ave.), Detroit, Mich.	June 1, 1920
CLARAHAN, CHARLES HENRY, JR. Structural Designer, Western Elec. Co., 822 North Euclid Ave., Oak Park, Ill.	April 19, 1920
CROWLEY, WILLIAM THOMAS. 699 Riley St., Buffalo, N. Y.	Jan. 19, 1920
DRISCOLL, LEON FRANCIS. Prin. Asst., Highway Constr., 6th Dist., Bureau of Highways, 102 Apsley St., Germantown, Philadelphia, Pa.	July 6, 1920
FERGUSON, ANGUS. Res. or Asst. County Engr., Barbour County, Philippi, W. Va.	April 19, 1920
FOSTER, WILLARD STILLWELL. 16 Ridge Rd., Rutherford, N. J.	June 1, 1920
GANEY, PAUL JEROME. Engr. with Frank J. Groman & Sons, 520 Polk St., Bethlehem, Pa.	July 6, 1920
GILL, JOSEPH ERNEST. Constr. Engr., Smith, Hauser & MacIsaac, General Delivery, Stapleton, N. Y.	June 1, 1920
GIVOTOVSKY, VICTOR TIMOTHY. Care, The Foundation Co., 120 Liberty St. (Res., 25 East 99th St.), New York City.	Mar. 9, 1920
GREENWOOD, HEMAN CHARLES. Hydr. Engr., Cia Gen. Elec. do Brazil, Rio de Janeiro, Brazil.	June 1, 1920

**JUNIORS (Continued)**

	Date of Membership.
HUESTIS, ROBERT ALEXANDER. Structural Designer, Doyle & Merriam, 1141 Seventeenth Ave., N., Seattle, Wash.....	July 6, 1920
HULL, NOAH ELDER. Asst. County Engr., Allen County, County Surv.'s Office, Fort Wayne, Ind.....	June 1, 1920
LINDSAY, WILLIAM, JR. Care, J. E. Sirrine & Co., Greenville, S. C..	July 6, 1920
MCCARTHY, CHARLES JOSEPH. 918 Nineteenth St., N. W., Washing- ton, D. C.....	July 6, 1920
MOORE, JUNIUS TEETZEL. Contr. Engr. (William E. Moore & Sons), 1112 Virginia St., Charleston, W. Va.....	July 6, 1920
PHIPPS, FRANCIS HARLOE. 102 South 6th Ave., Mount Vernon, N. Y....	Mar. 9, 1920
REILLY, THOMAS FRANK, JR. Constr. Engr., G. D. Jenssen Co., 1036 Post Ave., Port Richmond, N. Y.....	July 6, 1920
SCHANTZ, CLARENCE PAUL. 4559 North Morris St., Philadelphia, Pa...	June 1, 1920
SIMPSON, HERMAN VICTOR NATHANIEL. Engr. on Constr. Work, Sinclair Refining Co., East Chicago, Ind. (Res., 6811 Emerald Ave., Chi- cago, Ill.).....	April 19, 1920
SUN, YU-FONG PHILANDER. Asst. Engr., Works Dept., Comm. for Impvt. of River System of Chihli, 2 Taku Rd., Tientsin, China....	April 19, 1920
WILLEY, MARNEY BEN. Asst. Engr., M. I. Evinger, 222 Davidson Bldg., Des Moines, Iowa.....	April 19, 1920

**REINSTATEMENTS**

	Date of Reinstatement.
AULLS, HERBERT LEANDER.....	June 1, 1920
MANN, JOHN LAROX.....	April 21, 1920

**ASSOCIATE MEMBERS**

GUERDRUM, GEORGE HAGBART.....	April 21, 1920
RIGHTMIRE, CLAUDE HENRY.....	June 1, 1920
SHERMAN, ARTHUR LOUIS.....	April 21, 1920

**RESIGNATIONS**

	Date of Resignation.
REED, HENRY BUDD.....	June 1, 1920
WARE, JOHN.....	June 1, 1920

**ASSOCIATE MEMBERS**

FOWLER, CHARLES WORTHINGTON.....	June 1, 1920
TOMBO, CARL.....	June 1, 1920

**JUNIORS**

ROYAL, JOSEPH NELSON.....	June 1, 1920
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**DEATHS**

BEMENT, ROBERT BUNKER COLEMAN. Elected Member, September 7th, 1887; died May 7th, 1920.

BROWN, WILLIAM MAXWELL. Elected Member, February 5th, 1896; died May 29th, 1920.

FEILD, HUBBARD MOYLAN. Elected Member, October 1st, 1913; died April 11th, 1920.

FISKE, HAROLD LASALLE. Elected Junior, January 6th, 1915; killed in action (France),

October 6th, 1918.

DEATHS (*Continued*)

GILCHRIST, CHARLES ALYN. Elected Member, December 5th, 1911; died May 20th, 1920.

HAMLIN, HOMER. Elected Member, May 4th, 1904; died May 14th, 1920.

HATTON, HERBERT WATSON. Elected Junior, April 4th, 1905; Associate Member, June 1st, 1909; Member, October 8th, 1918; died July 13th, 1920.

HERRON, GEORGE MERRICK. Elected Junior, April 2d, 1907; Associate, February 2d, 1909; Associate Member, September 5th, 1911; died February, 1920.

LANGTON, JOHN. Elected Member, May 2d, 1900; died February 6th, 1920.

LE CONTE, LOUIS JULIAN. Elected Member, April 4th, 1877; died May 11th, 1920.

MAN, ALBON PLATT. Elected Member, September 5th, 1883; died April 27th, 1920.

SPILSBURY, EDMUND GYBBON. Elected Member, December 7th, 1892; died May 28th, 1920.

TORRANCE, WILLIAM MARTIN. Elected Member, July 1st, 1909; died May 18th, 1920.

VALUE, BEVERLY REID. Elected Member, January 2d, 1901; died June 10th, 1920.

VAUGHAN, GEORGE WASHINGTON. Elected Junior, March 3d, 1886; Member, November 4th, 1896; died June 5th, 1920.

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Total Membership of the Society, August 5th, 1920,

9 586.